PHOSPHATE

UNIVERSITY OF MICHIGAN
SEP 4 1956
MAIN READING ROOM

HEARINGS

BEFORE THE

SUBCOMMITTEE ON MINES AND MINING

OF THE

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS HOUSE OF REPRESENTATIVES

EIGHTY-FOURTH CONGRESS

SECOND SESSION

ON

H. R. 8394

TO AMEND SECTION 27 OF THE MINERAL LEASING ACT OF FEBRUARY 25, 1920, AS AMENDED (30 U. S. C., SEC. 184), IN ORDER TO PROMOTE THE DEVELOPMENT OF PHOSPHATE ON THE PUBLIC DOMAIN

JANUARY 25, 1956
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PHOSPHATE

WEDNESDAY, JANUARY 25, 1956

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE OF MINES AND MINING
OF THE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D. C.

The subcommittee met, pursuant to other business, in the committee room, New House Office Building, Hon. Walter Rogers (chairman of the subcommittee) presiding.

Mr. ROGERS. The Chair now calls up H. R. 8394, a bill, to amend section 27 of the Mineral Leasing Act of February 25, 1920, as amended (30 U. S. C., sec. 184), in order to promote the development of phosphate on the public domain.

(H. R. 8394 follows:)

[H. R. 8394, 84th Cong., 2d sess.]

A BILL To amend section 27 of the Mineral Leasing Act of February 25, 1920, as amended (30 U. S. C., sec. 184), in order to promote the development of phosphate on the public domain

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the second sentence of section 27 of the Act of February 25, 1920, as amended (30 U. S. C., sec. 184), is amended by the deletion of the words "exceeding in the aggregate five thousand one hundred and twenty acres in any one State, and".

Mr. ROGERS. Let the Chair make this statement in the beginning: That this bill was introduced by the Chair by request, and it is his understanding that the purpose of it is to change the present law that limits the holdings in any one State for the purposes of the development of phosphate. The limitation on lands held for that purpose, as the law now stands, is 10,240 acres in the United States. It is my understanding that this bill does not change that overall limitation but merely changes the limitation insofar as the individual or firms are affected in any one State, so that the entire 10,240 acres may be held in one State.

Now, without objection, I would like to include in the record at this point the letter from the Department of the Interior addressed to the Speaker under date of September 14, 1955, submitting this legislation and the request that it be passed.

I would also like to give for the record the comment or the recommendations of the Western Governors Conference that was held in November 1955. A recommendation was issued by the Western Governors Mining Advisory Council, in which it was stated:

The western governors urge the Department of Interior to reappraise the maximum acreage limitations presently existing on the leasing of Federal mineral

lands withdrawn from location and increase the acreage to meet the requirements of modern mining and refining needs.

Such a need is phosphate.

(The departmental letter referred to follows:)

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., September 14, 1955.

Hon. SAM RAYBURN,
Speaker of the House of Representatives,
Washington, D. C.

MY DEAR MR. SPEAKER: Enclosed is a draft of a proposed bill to amend section 27 of the Mineral Leasing Act of February 25, 1920, as amended (30 U. S. C., sec. 184), in order to promote the development of phosphate on the public domain.

We suggest that the proposed bill be referred to the appropriate committee for consideration and we recommend that it be enacted.

The second sentence of section 27 of the Mineral Leasing Act of February 25, 1920, as amended (30 U. S. C., sec. 184), provides that no person, association, or corporation shall take or hold at any time phosphate leases or permits exceeding in the aggregate 5,120 acres in any one State, and exceeding in the aggregate 10,240 acres in the United States. The proposed bill would delete the limitation of phosphate leases to 5,120 acres in any one State, though it would leave intact the overall limitation to 10,240 acres.

Nearly all the Federal phosphate lands are found in one area which extends over the four States of Montana, Wyoming, Idaho, and Utah. Throughout the area mining, marketing, and other conditions are similar, and the State boundaries are of little significance in the problems faced by phosphate miners. We do not propose to increase the aggregate of Federal lands which may be held by an individual under a phosphate lease, but we believe that it would be better to permit the lessee to have the entire 10,240 acres of leased lands within the boundaries of one State.

With a large number of companies engaged in phosphate operations on Federal lands at the present time, there is no reason to believe that permitting an increased holding in any one State would foster monopoly, or in any way be inconsistent with the system of antitrust laws which support the American system of competitive enterprise. Furthermore, the proposal to establish a new maximum of 10,240 acres on lands held under phosphate leases within the boundaries of a State would, if enacted, undoubtedly encourage many lessees of Federal lands to explore and develop larger areas than can be held under the existing statutory limitation. With the passage of time, it has become increasingly difficult to discover undeveloped mineral resources in the Nation and increasingly expensive to conduct exploratory and developmental operations with the most modern methods available. Because of the importance of minerals to the Nation's economy, it is essential that every feasible measure be adopted to encourage timely and orderly development of new sources of minerals.

Liberalization of the present acreage holdings with a view to increasing the amount of phosphate available for fertilizer and thereby supplying an expanding phosphate industry is desirable and consistent with the policy enunciated in the Mineral Leasing Act. Since June 3, 1948, when the present acreage limitation for phosphate mineral was fixed, much has been learned with respect to the extent and character of the substantial phosphate deposits. The demands of the phosphate market increased and the market is expected to be much greater in the future than it was a few years ago. Technological advances have been made in the processing of phosphate rock, particularly with the electric-furnace method, which requires large reserves for a single plant. The new methods of operation permit the mining of much larger quantities of phosphate rock by a single operation and, consequently, require that there be available a reserve of commercial rock of the size necessary for an efficient and economical operation; such quantities are difficult to obtain within the boundaries of any one State with present acreage limitation.

The Bureau of the Budget has advised that there is no objection to the submission of this proposed legislation to the Congress.

Sincerely yours,

ORME LEWIS,
Assistant Secretary of the Interior.

A BILL To amend section 27 of the Mineral Leasing Act of February 25, 1920, as amended (30 U. S. C., sec. 184), in order to promote the development of phosphate on the public domain

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the second sentence of section 27 of the Act of February 25, 1920, as amended (30 U. S. C., sec. 184), is amended by the deletion of the words "exceeding in the aggregate five thousand one hundred and twenty acres in any one State, and".

Without further statement on it, the Chair will now recognize Mr. Woozley and Mr. Bradshaw and Mr. Hoffman. I would suggest you come up to the witness table together and make any comments on the legislation that you desire.

STATEMENT OF EDWARD WOOZLEY, DIRECTOR, BUREAU OF LAND MANAGEMENT, DEPARTMENT OF THE INTERIOR; ACCOMPANIED BY CLARENCE R. BRADSHAW, ACTING ASSISTANT SOLICITOR FOR PUBLIC LANDS, DEPARTMENT OF THE INTERIOR; AND LEWIS E. HOFFMAN, BUREAU OF LAND MANAGEMENT, DEPARTMENT OF THE INTERIOR

Mr. WOOZLEY. I have a very short statement here, Mr. Chairman, I would like to read.

Mr. ROGERS. You may proceed.

Mr. WOOZLEY. A bill to amend section 27 of the Mineral Leasing Act of February 25, 1920, as amended (30 U. S. C., Sec. 184), in order to promote the development of phosphate on the public domain.

The second sentence of section 27 of the Mineral Leasing Act, as amended, relating to limitation of acreage which can be held by any person, association, or corporation provides a limitation of 5,120 acres in any one State and that no lessee can hold an aggregate of more than 10,240 acres in the United States. The proposed bill would delete the limitation of phosphate lease holdings, to 5,120 acres in any one State, though it would leave intact the overall limitation of 10,240 acres.

Nearly all the Federal phosphate leases are found in one area, extending over the States of Montana, Wyoming, Idaho, and Utah. We also have a small lease in the State of Arizona. There are some 53 outstanding phosphate leases with a total acreage of 30,113.30. These leases are held by 22 separate lessees, thus it follows that to permit the holding of 10,240 acres in any one State would not foster monopoly since competition has grown materially in the last decade in the phosphate industry. Moreover, throughout the phosphate areas, on the public domain, mining, marketing, and other conditions are similar. Therefore the State boundaries are of little significance in the problems faced by the phosphate miners.

We feel that to remove the State limitation and at the same time not increase the overall acreage limitations in phosphate leaseholdings would promote exploration of phosphate resources on the public lands and would be an inducement for continuance of mining operations on the areas where phosphate rock may be found.

Many millions of dollars have been spent by our phosphate lessees in the erection of plants in connection with the mining of phosphate on public lands; for instance, the Monsanto Chemical Co. has expended approximately $7 million in plants in connection with phosphate mining in Idaho. The Victor Chemical Co. has expended approximately

$10 million in connection with phosphate mining in Montana. The Food Machinery & Chemical Corp. has expended approximately $15 million in erection of plants in connection with their phosphate leases in Idaho, and J. R. Simplot Co. has expended in excess of $5 million in connection with its phosphate leases in Idaho and Montana. Smaller sums have been expended by other lessees. A lessee, therefore, to warrant these large expenditures for erection of plants and for other mining operations, needs sufficient acreage to insure a reasonably long-term operation, and that acreage very often is needed in the vicinity, if lands are available, where the plants have been erected. It would encourage greater production, therefore, if the State limitation of 5,120 acres was removed and permit a lessee to hold 10,240 acres under lease, even though that acreage was located in a single State.

(The table attached to the statement follows:)

Outstanding phosphate leases issued under the act of Feb. 25, 1920 (41 Stat. 437), as amended; total, 53

STATE OF ARIZONA

Lessee	Serial	Acreage
Randall Mills Corp., Paramount, Calif	Phoenix 085288	66.40

STATE OF IDAHO

Monsanto Chemical Co., St. Louis, Mo	Idaho 01	200.00
Do	Idaho 02	120.00
Do	Idaho 03	160.35
Do	Idaho 016	160.00
Do	Idaho 0257	120.00
Do	Idaho 0258	80.00
Do	Idaho 0997	590.56
Do	Idaho 01005	120.00
Do	Idaho 01440	840.00
Do	Idaho 01441	436.21
Do	Idaho 05613	240.00
Do	Idaho 05723	201.04
Do	Idaho 05860	120.00
Do	Blackfoot 055163	160.00
Do	Blackfoot 055875	363.70
Do	Blackfoot 055894	200.00
Do	Blackfoot 056009	200.00
Do	Blackfoot 056192	65.38
Western Fertilizer Association, Salt Lake City, Utah	Idaho 04	1,522.24
Grant J. Murdock, Montpelier, Idaho	Idaho 05612	360.00
Do	Idaho 05622	280.00
Frederick P. Champ, Logan, Utah	Idaho 04979	120.31
Food Machinery & Chemical Corp., New York, N. Y	Idaho 02272	80.00
Anaconda Copper Mining Co., Butte, Mont	Idaho 01603	688.08
Do	Idaho 04494	467.48
J. R. Simplot Co., Boise, Idaho	Idaho 0678	200.00
Do	Idaho 02243	626.67
Do	Idaho 02400	822.25
Do	Idaho 05379	1,346.02
J. A. Terteling & Sons, Boise, Idaho	Idaho 04373	762.41
Do	Idaho 04374	640.00
Do	Idaho 04375	1,160.00
Do	Idaho 04775	600.00
Do	Idaho 05975	780.88
Total Idaho acreage		14,637.58

Outstanding phosphate leases issued under the act of Feb. 25, 1920 (41 Stat. 437), as amended; total, 53—Continued

STATE OF MONTANA

Lessee	Serial	Acreage
Montana Phosphate Products, Co., Garrison, Mont	Montana 012625	560.00
Do	Great Falls 076740	800.00
Do	Great Falls 086315	480.00
Mineral Hill Mining Co., Butte, Mont	Great Falls 076890	882.44
Charles A. Graveley	Great Falls 077348	1,275.70
J. R. Simplot Co., Boise, Idaho	Montana 012510	2,330.07
Victor Chemical Works, Chicago, Ill	Great Falls 086708	480.00
Do	Great Falls 086751	2,049.81
International Minerals & Chemical Corp., Chicago, Ill	Great Falls 077838	485.64
Do	Great Falls 084416	1,032.84
Lee H. Skoels, Maxville, Mont	Great Falls 084452	304.02
Russell Luke, Butte, Mont	Great Falls 086717	1,282.00
Mountain Meadows Phosphate Mining Co	Great Falls 088271	160.00
Sunlight Mining Co., Spokane, Wash	Montana 01616	617.34
Peter Antonioli and Carl C. Martin, Butte, Mont	Montana 01738	1,078.67
Spokane Chemical Co., Spokane, Wash	Montana 011033	413.60
Total Montana acreage		14,232.13

STATE OF UTAH

John M. Uren and W. J. Connor, Salt Lake City, Utah	Salt Lake 051785	640.00

STATE OF WYOMING

San Francisco Sulphur Co., San Francisco, Calif	Wyoming 03467	537.19
Arizona brought forward		66.40
Total acreage		30,113.30

Mr. WOOZLEY. We also have a list, Mr. Chairman, attached to this statement, which will be handed to the members of the committee if it has not already, which shows the acreages that are leased to each company, and shows that some of them are very close to the 5,120 acreage limitation at this time. Of course, to justify an investment such as they have they will need some reserves of phosphate for the next several years.

We also might mention that practically every operating company that deals in the public domain has written to us and given us their support and concurrence in this. In fact, most of them have asked for this amendment to the existing bill.

Mr. ROGERS. Do you have any questions, Mr. Engle?

Mr. ENGLE. No questions.

Mr. ROGERS. Any other questions?

Mr. DAWSON. How many phosphate leases do you say you have?

Mr. WOOZLEY. 53.

Mr. DAWSON. Out of the 53 how many would you estimate have urged the passage of this bill?

Mr. WOOZLEY. I would say probably 15, somewhere around there, Mr. Dawson.

Mr. DAWSON. And of the 53 leases, what percentage of your total acreage would be vested in, we will say, the top 10?

Mr. WOOZLEY. We could go through it, but it is rather misleading, Mr. Congressman. For example, the Food, Machinery and Chemical Corp. actually only shows here on our lease records as holding 80 acres in the State of Idaho. Yet they have under the name of Westvaco a large chemical plant at Pocatello, Idaho, and have a working arrangement with the Simplot Fertilizer Co. So they fuse the low-grade phosphates and the higher grades and can use a phosphate there for chemical manufacture that could not be used in fertilizer. So they use the facilities and the minerals that come from the Simplot leases to supplement their industrial output. So that they only show 80 acres and yet they have a $15 million investment.

I would say, in answer to your question, that possibly 10 companies have probably the majority of the lands leased. The others are more or less smaller companies who sell their overriding royalties or who work through one or the other operating companies.

Mr. DAWSON. In Monsanto's operation in Soda Springs area, they are limited now to 5,000 acres?

Mr. WOOZLEY. Yes, sir.

Mr. DAWSON. Are they dependent upon other lessees in the area for additional acreage?

Mr. WOOZLEY. Not at this time. However, if the acreage limitation were not amended, it is possible they would have to go to other people and pay an override in order to get phosphate to operate, which would leave them in a pretty unsatisfactory situation as far as operations are concerned. They would have no assurance of future operations unless they do drop some of the lands they already are operating on and take others.

Mr. DAWSON. That is all.

Mr. WOOZLEY. Mr. Bradshaw would like to add something to this.

Mr. BRADSHAW. I would just like to add a little to what has been said.

The United States owns some phosphate in the State of Florida. Aside from that all of the phosphate deposits that are presently workable are in the 4 States—Idaho, Montana, Wyoming, and Utah. There may be a little bit extending into the northwestern part of Colorado.

The State limitation, of course, was applied to all of the minerals under the Leasing Act, but in the case of phosphate in the West—and that is the only Government phosphate that is being developed except two or three 40-acre tracts in Florida— the phosphate deposits are in eastern Idaho, western Montana, western Wyoming, and northeastern Utah. There is practically a solid body in there.

In recent years they began developing phosphate by the electric furnace method and by using that method they are able to develop much lower grade rock than they could develop with the sulphuric acid method. I believe under the sulphuric acid method 30 percent bone phosphate of lime is the lowest grade they can work adequately. But in the electric furnaces they are able to take phosphate ranging from 18 percent up to above 30 percent and mix it so as to get a uniform grade around 24 percent and run it through the electric furnaces.

The only way, of course, they can make a profit doing that is to handle large tonnages, and large tonnages require large acreages, and

the acreages should be reasonably close to the plant because the lower grades of phosphate, the less margin of profit, and the less possibility of shipping it for any distance. That is the reason that we feel that the State limitation should be removed. Actually two reasons, because, in effect, the phosphate area does not cover much more than the area of one average western State, and it is all more or less one body, and also because in order to get the phosphate produced by the electric furnace method large acreages are necessary in order to sustain a continued operation over a reasonable period of time.

Mr. ROGERS. Let me ask you this question: Insofar as the present expansion has gone concerning Monsanto, are there other lands available to that particular corporation adjacent to what they now own that are not held by others, that is, they are still under the Government and can be acquired by them should this bill pass?

Mr. BRADSHAW. There are other lands, yes, sir; and there are other lands in the State of Idaho that are not under lease that are more convenient to their plant than lands, say, in Wyoming and Montana or Utah.

Mr. ROGERS. Are there any lands close to their plant that are under lease at the present time by third parties that they would be required to purchase from or pay an override in order to get?

Mr. BRADSHAW. I would not want to say positively because I have not made a close study of that, but I do not believe that is true. There are other lands not far from their plant that are leased by other people who are using the electric furnace method, I believe, but as far as I know—I might say about these operators: We have fifty-some-odd lessees. A number of those lessees are small lessees. Some of them take the raw rock out and grind or process it so it can be applied. That has a rather limited market because it is effective only in strongly acid soils. I think there are 2 or 3 that produce that type of phosphate.

There are a few others who operate small mines and use the sulfuric-acid process. That is a mixture of 50 percent sulfuric acid and 50 percent phosphate rock. And they deal principally with the local market.

There is really a line of division between the large operators who use the electric furnace method and the small operators in the main who use the sulfuric-acid method.

Mr. ROGERS. Mr. Bradshaw, let me ask you this question: What percentage of the known potential in any one of these States would the 10,240 acres be?

Mr. BRADSHAW. It would be a very small percentage. I cannot give you the exact figures, but the phosphate area is a rather extensive one. The whole area that contains phosphate rock is approximately as large, I would say, as the State of Wyoming.

Now, the phosphate rock does not occur consistently all over that area. What I mean by that is it is not a solid sedimentary deposit that extends from one border to the other.

What happened, according to the geologists, is that this phosphate was formed in the bed of the sea as a sedimentary deposit that covered the whole area. In some places you can follow the phosphate in pretty much the same shape it was laid down, but even there it is broken by erosion and patches here and there. In the mountainous areas the beds have been tilted and broken, largely, so that sometimes

you only get 30 or 40 acres that contain phosphate, and then you go over a half a mile and find another segment of what really is a vein now because it is tilted at a very steep angle; and they can only develop that, of course, to reasonable depths because of the expense of lifting it out of the ground.

Mr. ROGERS. Does that portion that does not contain phosphate get counted in the 5,120 acres at the present time?

Mr. BRADSHAW. In effect it is, because they take their leases by legal subdivision. It would not entirely. There might be vacant forties between leases that they would not take.

Mr. ROGERS. Mr. Bradshaw, if the present operator had 5,120 acres laid out and he knew places where there was a void in that insofar as phosphate is concerned, could he release that to the Government and assert new leases on additional land?

Mr. BRADSHAW. If he had as much as a legal subdivision, 40 acres in a tract, he could release it; yes, sir. But you see, the point is there that with the width of the phosphate mainly from 3 to 10 feet, it may run through a 40 or part way through and that is all you have, but you have to take the entire 40 acres to get that little strip of phosphate that runs through.

As a matter of fact, when the Leasing Act was first enacted it placed a limitation on the length of an area that could be leased for that very reason, because it was thought that people would take narrow strips along the veins and appropriate more of the vein than they should. But there are extremely large areas of phosphate in the West that are not under lease, largely because they are remote from markets, but largely also because there is a limited number of people interested in developing phosphate.

Mr. ROGERS. Mr. Bradshaw, enactment of this bill would not, in your opinion, create an injustice so far as some of the smaller phosphate developers are concerned and favoritism to the big companies?

Mr. BRADSHAW. I do not believe it would because I do not think the smaller people could—they could not develop this phosphate, and they would have to sell it to the big companies, and I do not think the big companies would be interested in seeing that the smaller people made an excessive profit at all. So actually I do not think so, and I think actually, in order to get the big companies in there to develop this low-grade stuff, they would or ought to have acreage enough to maintain, say, a 40- or 50-year operation. Otherwise their investment would be topheavy.

Mr. ROGERS. Can we conclude, then, that your feeling is, if this legislation is not enacted, we will not open the door to as much development of phosphate as would be possible under this bill?

Mr. BRADSHAW. That is right, sir; I believe that.

Mr. ROGERS. Then it would more or less be that the development would be curtailed if we did not do something to release this limitation insofar as individual States is concerned?

Mr. BRADSHAW. I think so.

Mr. DAWSON. Mr. Chairman?

Mr. ROGERS. Mr. Dawson.

Mr. DAWSON. What percentage of the phosphate that is produced in this country is produced on the public domain?

Mr. BRADSHAW. I could have answered that probably a few years ago when I was a little closer to the subject than I am now, but I

would say that the percentage is very low, probably not more than around 10 percent or in that neighborhood, because, you see, most of the phosphate that is produced in this country is produced in Florida and Tennessee, primarily in Florida. And the reason for that is, of course, that Florida is much closer to the market area in this country for phosphate. Most of the phosphate that is produced is used, and it is more needed, in the East than in the West. The East has more wornout soil and uses large quantities of phosphate, where in large areas of the West they do not use any or use very little.

Another reason is that in Florida they have a deposit of what they call pebble phosphate, which they obtain largely by hydraulic mining. It can be mined cheaper than the rock phosphate. In fact, they have rock phosphate in Florida the same as they do in the West, and the rock phosphate producers have been out of business for several years now. They cannot even compete with the pebble producers.

Mr. DAWSON. How is pebble phosphate produced?

Mr. BRADSHAW. They produce that by hydraulic mining, and then they mix it with sulfuric acid and make the acid phosphate primarily. It comes in small lumps or pebbles, and it is washed up by hydraulic mining and put through a separating table and then they, once they get the phosphate clean, take it and manufacture the fertilizer.

Mr. DAWSON. Mr. Chairman, this is not setting any precedent in the way of enlarging leasing acreage?

Mr. BRADSHAW. No, sir.

Mr. DAWSON. I recall in 1947 I introduced a bill to expand the leasing acreage on coal, which was passed, and I do not know what others have been passed since.

Counsel calls my attention to the fact we increased the oil and gas acreage in 1953.

Mr. HOFFMAN. Public Law 561.

Mr. BRADSHAW. The oil and gas acreage was increased in 1946 from 7,680 to 15,320, and in 1953 it was tripled over what it had been—46,000.

This does not increase the overall acreage that a man can hold in the United States. The overall limitation, if this bill were enacted, would still be 10,240 acres.

Of course, there is one thing I had not touched on, and it really is not material at the moment, although it might become material. If an operator could find acreage, say, at the corner of Idaho, Montana, and Wyoming, or in the line between 2 States, he could get 10,240 acres, while the man to the east or west or him could only get 5,120 acres because, as I say, this phosphate deposit is in effect a little phosphate state of itself. It is a solid area in there in the 4 States.

Mr. ROGERS. Mr. Bradshaw, in view of the manner of developing phosphate properties, would it not be in the interest of a company to have the land that they were going to acquire if this bill passed, adjacent to their present holdings?

Mr. BRADSHAW. Yes; it would.

Mr. ROGERS. As I understand it, this leasing is by competitive bids.

Mr. BRADSHAW. It is by competitive bid if there is any competitive interest shown at all.

Mr. ROGERS. What I am getting at is this: Suppose a company's present 5,120-acre tract has been completely surrounded by leases that

have been acquired by third parties. They would be in a pretty bad situation, would they not, even if the bill passed?

Mr. BRADSHAW. If all of the land within a reasonable radius of their plant had been taken up, that would be true. I understand that is not the case, however. In other words, actually the demand for phosphate land out there is not too excessive as yet.

Mr. ROGERS. I was going to say, would there be any indication of a gentleman's agreement between those developers not to bid against each other on adjoining lands?

Mr. BRADSHAW. We have not had any indication so far anyway. As a matter of fact, we have had some evidence of the opposite, sort of a dog-eat-dog proposition. In one case I think we got a bid far in excess of the value of some property because one company apparently wanted to keep the other one out of there.

Mr. ROGERS. I see.

Mr. BRADSHAW. And it was bid by a company that did not have any other interest in that immediate area, the high bid was.

Mr. ROGERS. Are you bound at the present time to accept the highest bid?

Mr. BRADSHAW. Not necessarily. We ordinarily do, and I believe we did in that case.

Mr. HOFFMAN. The Secretary reserves the right to refuse any and all bids.

Mr. ROGERS. Then he has to advertise for new bids?

Mr. HOFFMAN. He has to advertise for new bids; yes, sir.

Mr. ROGERS. Are there any other questions?

Mr. DAWSON. Has there been any objections filed to this bill; any letters received?

Mr. ROGERS. Thank you, Mr. Dawson. I was going to ask that in the beginning and forgot it. Would you please tell us is there any opposition to the legislation?

Mr. WOOZLEY. We have not received any.

Mr. HOFFMAN. There has not been a single objection by any leaseholder.

Mr. ROGERS. Let me ask this: Are there any people in position that probably would object if they were given the opportunity?

Mr. BRADSHAW. Of course, I could not say positively what the attitude of the people would be. I do not think so though, because I think most of the lessees who have not consented are lessees who have developed underground mines, and with underground mines, under present conditions at least, they can only develop the high-grade deposits.

Of course, it is very much to the interest of the Government, I might say, and not to the disinterest of the small operators who have underground mines and high-grade their deposits more or less, but it is to the interest of the Government to get this low-grade stuff developed that they can get on the surface.

Mr. ROGERS. That is right.

Mr. BRADSHAW. Because they develop probably 4 or 5 tons of low-grade stuff along with 1 ton of high-grade by using the electric furnace method and operating a large operation. If they took the high-grade out, they leave the stuff entirely too low to develop under present conditions, certainly. There may come a time when we will have to use low-grade stuff. I hope it will be a long time off.

Mr. ROGERS. Do you feel the full development of our phosphate resources is to the best interest of the general economy and the defense of this country at this time?

Mr. BRADSHAW. I think so; yes.

Mr. ROGERS. Mr. Abbott.

Mr. ABBOTT. If I may ask one question, Mr. Chairman. What determines whether you have competitive bidding?

Mr. BRADSHAW. The question of competitive interest. If two or more applications are filed for the same land we would automatically have competitive bidding. If one application is filed and anybody else comes in and signifies an interest in the property, we would have competitive bidding. And I think probably it is true that in the large majority of cases we go to competitive bidding.

Mr. ABBOTT. What you are saying is, if an application is filed and notice is published of that application being filed, others may become interested?

Mr. BRADSHAW. That is right.

Mr. ABBOTT. You do not classify the lands as you do on oil and gas, for example?

Mr. BRADSHAW. No, but the notices are published for 30 days, I believe it is, and if anybody comes in during that time and indicates an interest in the property, then we offer for competitive bidding.

Mr. ROGERS. How many leases are now held on Government property?

Mr. BRADSHAW. 53 outstanding leases.

Mr. ROGERS Do you have a copy of those?

Mr. HOFFMAN. They are attached to Mr. Woozley's statement.

Mr. ABBOTT. Does that include acreages?

Mr. HOFFMAN. Yes.

I might add, Mr. Chairman, to show the concentrated area of phosphate, that out of the 53 there is 1 lease in the State of Arizona for 66 and a fraction acres, and 1 lease in the State of Utah for 640 acres, and 1 lease in the State of Wyoming for 537 acres, approximately, which indicates that the present operation of phosphate is concentrated in Idaho and Montana because 50 of the 53 are in the 2 States of Idaho and Montana. But that does not necessarily mean that the future developments may not expand the areas in the other States.

Mr. WOOZLEY. Mr. Chairman, I would like to point out, inasmuch as you do not have this before you, it might be misleading to say 53 leases. Actually Monsanto Chemical Co. has 18 leases in Idaho alone. So when we talk about 53 leases it does mean 53 lessees. Some have several leases.

Another thing I would like to clear up, if I might interrupt Mr. Bradshaw.

Having been lands commissioner in Idaho, I can say there is very little acreage that the States or private individuals hold which these persons can lease to supplement their 5,120 acres.

There was a report made in about 1917 or 1918 on these lands, and where the lands were shown to be valuable at that time the States did not get possession of the phosphate, and any patents that have been issued since that time have also reserved phosphate. So there is very little opportunity for them to supplement their 5,120 acres by leasing from private individuals or from the States.

We do have some State leases but they are ones in which phosphates have been found after the State go their clear list.

Mr. DAWSON. I would like to ask you the same question I asked Mr. Bradshaw, only restricted somewhat. What percentage of the phosphate produced in the West, the four States mentioned, comes from public domain lands?

Mr. WOOZLEY. I would say there would be 80 percent or better, probably closer to 90 percent, because the Manfield report, made in about 1917, took core drillings and determined where these phosphates were to quite a considerable extent, and since that time very little of the lands have been either turned to the States without a reservation or patented. So most of the phosphate in those four States is still in public ownership.

Mr. DAWSON. Wht is the average royalty you get on phosphate?

Mr. WOOZLEY. It varies. We get about 25 cents a ton. I would say that would be the average. Is that right?

Mr. HOFFMAN. Yes.

Mr. BRADSHAW. Our later leases run up to 10 percent, with a minimum of 25 cents a ton, I believe. Some of the earlier leases were at a lower royalty rate.

Mr. HOFFMAN. Four percent when they first started.

Mr. DAWSON. Do we import phosphate into this country?

Mr. BRADSHAW. I do not believe we do. As a matter of fact, even before the western development and before World War II we were exporting phosphate. In fact, the hard rock miners in Florida were only able to produce by exporting. There was sort of an agreement between them and the pebble phosphate producers that the pebble people would stay out of the foreign market, and that is the only way they were able to produce. But after the development of phosphate in northern Africa and some other localities, they were not even able to produce for export. So I do not believe there is any export from Florida at all.

There is considerable export of the western phosphate. I know some of it goes to Japan.

Mr. DAWSON. That is all, Mr. Chairman.

Mr. ROGERS. Thank you, gentlemen.

Mr. DAWSON. Mr. Chairman, I move we report the bill favorably to the full committee.

Mr. UTT. Second.

Mr. ROGERS. You have heard the motion and the second. All those in favor say "Aye."

Those opposed say "No."

The motion is carried and it is so ordered.

I believe that concludes the business before the subcommittee this morning. The subcommittee will stand adjourned.

(Whereupon, at 11:25 a. m., the subcommittee adjourned to reconvene at the call of the Chair.)

PHOSPHATE

WEDNESDAY, MAY 23, 1956

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON MINES AND MINING,
OF THE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D. C.

The subcommittee met, pursuant to call, at 10:10 a. m., in the committee room, New House Office Building, Hon. Walter Rogers (chairman of the subcommittee) presiding.

Mr. ROGERS. The Subcommittee on Mines and Mining will come to order for the further consideration of H. R. 8394, to amend section 27 of the Mineral Leasing Act of February 25, 1920 as amended, in order to promote the development of phosphate on the public domain.

Let the Chair state this: That hearings were held on this bill at an earlier date, and the bill was voted out of the subcommittee and into the full committee. By unanimous consent request the bill was returned to the subcommittee for further hearings due to the fact that there was opposition developed that the subcommittee had been told was not present when we had the original hearings. So we are going to go into these hearings and try to get all of the facts concerning this measure.

We have here this morning several individuals and groups represented. The American Mining Congress will be the first group to be heard, and they will be represented by Mr. Julian D. Conover, executive vice president.

Mr. Conover, if you will take the witness stand, you will be recognized for your statement.

STATEMENT OF JULIAN D. CONOVER, EXECUTIVE VICE PRESIDENT, AMERICAN MINING CONGRESS

Mr. CONOVER. Mr. Chairman and gentlemen of the committee, my name is Julian D. Conover. I am executive vice president of the American Mining Congress, a national organization of the mining industry of the United States.

I should like to present a general introductory statement on H. R. 8394, and this will be followed by statements in more detail from members of the mining industry who are actively engaged in phosphate mining and processing operations in the West.

Early in February, Mr. Chairman, you requested us to comment on H. R. 8394. In order to reflect the industry's thinking, we submitted the bill to our public lands committee, which is composed of representatives of small and large mining operations, officials of State mining organizations, public land attorneys, and geologists through-

out the West. The members of the committee were unanimous in their endorsement of the bill. It was the general opinion that the best interests of the phosphate mining industry and of our entire industrial and agricultural economy would be well served by its enactment. It was also clearly evident that approval of the bill would in no way result in any one lessee or group controlling the output, or any major portion of the output, of phosphate in the United States.

Accordingly, on February 24 we advised you that the American Mining Congress supports the enactment of H. R. 8394. We believe that the continued growth and development of the Western phosphate industry will be encouraged by passage of this bill.

We should also like to invite your attention to a recommendation of the Western Governors Mineral Policies Conference adopted at Sacramento in November of last year, and subsequently approved as a statement of policy by 10 western governors, reading as follows:

> The Western governors urge the Department of Interior to reappraise the maximum acreage limitations presently existing on the leasing of Federal mineral lands withdrawn from location and increase the acreage to meet the requirements of modern mining and refining needs. Illustrative of such need is phosphate.

As your committee is aware, the present law allows an individual or company to hold 10,240 acres of phosphate-bearing public lands under lease, but limits the area that may be held within any 1 State to 5,120 acres. H. R. 8394 would simply eliminate the restriction imposed upon a phosphate producer by the State-boundary lines, without any increase in the total acreage that may be held under lease. In our opinion the limitation by reason of State lines is artificial and arbitrary and should be eliminated.

The Department of Interior has recently pointed out that large reserves of phosphate rock are necessary to justify the heavy investment for a large-scale modern phosphate processing plant. Under the present law a phosphate plant located at or near a State line, with commercial, phosphate deposits on both sides of the line, could have available within economical haulage distance the full 10,240 acres of phosphate-bearing lands, and would have a marked advantage over a plant seeking to develop phosphate production at some distance from the State line, where only 5,120 acres would be available.

In view of the great extent of the Western phosphate deposits, now known to exist over an area of some 135,000 square miles in Idaho, Montana, Wyoming, Utah and Nevada, a producer holding 10,240 acres could not begin to exert a monopoly in the industry. Such an area, 10,240 acres, is only a minute fraction of the total land now known to contain valuable phosphate deposits. As a matter of fact, the Western phosphate industry itself is but a small segment of the total phosphate industry in the United States. Marketable production of phosphate rock in the Western States last year was only 16 percent of total United States production, and according to Bureau of Mines figures, only a third of this Western production—or a little over 5 percent of the total United States production—was from the public domain.

The United States Geological Survey is responsible for mapping phosphate lands and for notifying the Bureau of Land Management of lands known to contain economic phosphate deposits. The Geological Survey is also responsible for supervising mining practices to

prevent waste and to conserve currently uneconomic resources for future recovery. On application from an individual or company, lands which are known to contain phosphate deposits are opened to competitive bids for leases by the Bureau of Land Management. Such competitive bidding protects the interests of the public and further assures that no phosphate producer on the public domain may enjoy an unfair advantage over his competitors.

Handicapped as it is by reason of its adverse location to markets, the western phosphate industry must be given every incentive to develop if it is to contribute in a material way to our economy. The development of western phosphate calls for high-tonnage, low-cost operations requiring costly plant installations, which, once established, cannot be moved. Unless provided with adequate ore reserves for long life and potential expansion, the large investment required for such an installation would not be justified.

In the case of other leasable minerals, the Congress has recognized the need for adequate reserves, as reflected in the maximum holdings permitted. Thus, a lessee of lands containing potash—a mineral of much more limited occurrence than phosphate—may hold 17,920 acres in one group and an additional 10,240 acres in another group, or a total of 28,160 acres in 1 State—more than 5 times as much as a phosphate lessee is now allowed. In addition, up to 51,200 acres of potash lands may be held under permit. In the case of sodium, a lessee may hold up to 15,360 acres in 1 State—or 3 times as much as a phosphate lessee is allowed under present law.

In the case of each of these minerals Congress found it desirable in the public interest to increase substantially the acreage limitations, in order to permit the growth and development of these industries. A similar situation now exists in the case of western phosphate. While the bill before you does not increase the overall acreage limitation, it does remove the artificial restrictions based on State boundaries, and will be most helpful in encouraging the development and expansion of a promising western industry.

We respectfully recommend that H. R. 8394 be enacted.

Mr. ROGERS. Thank you, Mr. Conover.

The Chair will recognize the gentleman from Colorado, Mr. Aspinall.

Mr. ASPINALL. I have but one question of Mr. Conover, and it has to do with the desire at the present time of the industry to again double the area possible under the leasing law. In 1950, if I remember correctly, in the 81st Congress we doubled the area. Why is it, Mr. Conover, that the industry comes in so quickly within a period of 6 years and asks for the same generous treatment on the part of Congress?

Mr. CONOVER. In the first place, Mr. Aspinall, the request under this act is not for an increase in the total acreage.

Mr. ASPINALL. I understand that.

Mr. CONOVER. Simply an increase to allow the total acreage to be held within one State rather than on opposite sides of a State line. In the second place, the western phosphate industry has been developed, we are happy to say, to a considerable extent over that period of time. There have been a number of companies who have gone in, explored the known areas, and decided to make investments, and they find that in order to assure the continuance of the security of those invest-

ments and the expansion of them, in order to justify this very heavy expenditure for additional processing or furnace plants that they must have assurance of greater reserves than are available in the 5,000-acre tract. It is a very similar situation to what has taken place in the case of sodium and potash.

Mr. ASPINALL. Is there any possibility under the present law for lessees of different tracts to get together and operate their holdings jointly?

Mr. CONOVER. A lot of things are possible. But a company planning an investment or an enlargement of its plant must have the assurance of the reserves available directly to it. If the land is open for someone else to locate, they would not have that assurance.

As to the total area, I am informed that there are some 2,700 miles of outcrop now known and mapped, and that exposure of the phosphate beds is being increased as additional mapping takes place.

Just recently an additional 75 miles were discovered in Nevada. So there is plenty of acreage, and the reserves are estimated as sufficient to last for a long time.

But when you have a plant you have got to have your reserves close enough so that you can bring the ore directly to that plant; you cannot bring it a distance of more than 25 or 30 miles, say.

Mr. ASPINALL. One other question, Mr. Chairman. What happens to the other minerals that might be in place with the phosphate, Mr. Conover? Does the lessee have a right to those minerals that come out at the same time in the mining operation?

Mr. CONOVER. I am not too familiar, Mr. Aspinall, with the leasing contracts. I understand, but I prefer to have this verified by witnesses who are actually in the business, that the leases call for a certain minimum royalty, and that the royalty is based on the value of the product.

Now to the extent that there may be other valuable recoverable products in the ore, the royalty would apply in the same manner to such products as extracted.

Mr. ASPINALL. I understand that, but I understand uranium is found in some of the strata. Would it be contrary to our procedures followed at this time in the mining of uranium in other areas to permit a lessee of a tract of land of the size of the request made at this time to get uranium content and mine it and take the profit therefrom?

Mr. CONOVER. I can understand your concern, Mr. Aspinall. I believe there is a very extremely small quantity of uranium in some of this phosphate, possibly one one-hundredths of 1 percent. Now the same is true in some of the phosphate deposits in Florida. I recall that the Atomic Energy Commission made arrangements with some of the producers down there to actually recover that. It was not economical. They had to have Government help to get that terrifically small amount of uranium out. That was when the Government was seeking every possible source of the material. Certainly it would not be economic to recover the uranium by itself. Nor do I believe it would be economic to recover it from the phosphates in the West at the present time on the present price schedule of uranium.

We speak of these western reserves, which can be figured, according to the Bureau of Mines' publication, as possibly 1,500 years' supply for the entire country. So if there is, and let us assume there is, that one-hundredth of 1 percent of uranium in there, at the time we get

around to where it might possibly be extractable, there will be a world of the phosphate rocks still available from which it could be extracted.

Mr. ASPINALL. I think that is all.

Mr. ROGERS. The Chair recognizes the gentleman from Idaho, Mr. Budge.

Mr. BUDGE. Mr. Conover, I note in your statement you referred to the fact that the mining about which we are talking this morning accounts for only a little over 5 percent of the total United States production.

Mr. CONOVER. Yes.

Mr. BUDGE. From what source is the other 95 percent mined? Is that from land which is owned in fee by the individual mining company?

Mr. CONOVER. My statement, Mr. Budge, was to the effect that of the total United States production last year approximately 16 percent came from this western phosphate area. The other 84 percent came primarily from Florida, and to a lesser extent from Tennessee. Now of that 16 percent in these 4 Western States, 5 percent, that is, one-third, a little over 5 percent, came from public lands. I do not know the exact amount. I would have to check the figures, but the remaining 10 to 11 percent came mainly from Indian lands and from privately held fee lands.

Mr. BUDGE. In other words, in the West where we have such large areas of public domain, if we are going to mine the phosphate it has to come pretty much from the Federal lands, whereas in other areas it would be land which is owned by the individual mining companies. Is that correct?

Mr. CONOVER. The eastern lands, I think, are for practical purposes 100 percent owned by private interests.

Mr. BUDGE. That is all, Mr. Chairman.

Mr. ROGERS. The gentleman from Montana.

Mr. METCALF. No questions, Mr. Chairman.

Mr. ROGERS. Mr. Conover, just 1 or 2 questions in keeping with Mr. Budge's line of questioning. Do I understand you to say that 5 percent of the phosphate, which amounts to one-third of that mined in this western area, comes from public lands?

Mr. CONOVER. That is my statement; yes, sir.

Mr. ROGERS. Then the rest of it—I did not hear you clearly—comes from Indian lands and from private lands?

Mr. CONOVER. That is correct as of the present time.

Mr. ROGERS. What percentage from Indian lands?

Mr. CONOVER. We had some trouble getting the figures. It would possibly be 5 or 6 percent. It is roughly a one-third division. I would not want to go on record on that, but it is on that order.

Mr. ROGERS. I understand it is just an estimate. What would be the acreage in private lands, just estimating, the amount of acreage that would be in private lands and in Indian lands?

Mr. CONOVER. I do not have those figures, Mr. Chairman.

Mr. ROGERS. What I am thinking about is this, Mr. Conover: We have been doing a lot of talking about reserves in this bill, and, of course, the bill was requested by the Department of the Interior, in the first place, for the promotion of mining of this phosphate in its development in this area. What I am thinking about is that, if you

remove the entire public-land picture, what effect would that have on your basic reserves for phosphate mining in this particular area?

Mr. CONOVER. Let's put it this way, Mr. Chairman: that whereas only one-third of the western production at the present time comes from the public domain, probably 90 to 95 percent of the undeveloped reserves are on the public domain, and the operations on the public domain are subject to the lease restrictions. In order to adequately develop this tremendous acreage which is public domain they do need more leeway to develop reserves adjacent to where their plants are located.

Mr. ROGERS. You mean by that, now, that most of the Indian lands and most of the private lands have been taken into the reserve area of these various companies and are set up on their reserves at the present time?

Mr. CONOVER. To a far greater extent than the public domain. The big, the tremendous undeveloped acreage of phosphate-bearing land is on the public domain.

Mr. ROGERS. Let me ask you this: How are those reserves determined insofar as these individual companies are concerned? Are the reserves that you refer to on the private lands and the Indian lands, is that just one layer of phosphate at the top or are they taking into consideration all of the phosphate deposits as far down as they would be economic to mine? In their reserve figures.

Mr. CONOVER. The figures which have been compiled on that relate to those parts of the phosphate formation which are known to exist and which are economically extractable.

Mr. ROGERS. That is, they set their reserves up on a basis of the economic feasibility of being able to mine them?

Mr. CONOVER. Yes.

Mr. ROGERS. Do you know, Mr. Conover, what yardstick they are using insofar as that economic feasibility is concerned at the present time? Are they using a yardstick of economic feasibility on a comparison basis with the deposits of phosphate on Federal lands? That is, if they could get their hands on those Federal lands, they could easily mine the phosphate.

Mr. CONOVER. I am afraid I did not quite follow your question.

Mr. ROGERS. It is hard to make myself clear on this. What I am thinking about is this: In order to determine economic feasibility we must have some type of yardstick.

Mr. CONOVER. Yes.

Mr. ROGERS. What I am wondering is what yardstick these companies are using to determine the economic feasibility of mining the phosphate they already have under their control. I know in some instances in determining economic feasibility you do it on a comparison basis. You say, "We can mine this phosphate for so much money, but if we could get our hands on these Federal lands over here, we could mine it for so much less money; therefore, we are going to use the cost of mining on Federal lands in the economic feasibility analysis in setting up our reserves on our own holdings."

Mr. CONOVER. I would like to defer detailed answer to that question to some of the witnesses familiar with it. But I would say, in general, that the economic feasibility does not vary as to ownership. The economic feasibility is a factor depending on what your costs are, and it would be the same whether the lands were federally owned,

whether they were Indian lands, or whether they were private lands. The same yardstick would apply.

Mr. ROGERS. I believe that is all.

Mr. BUDGE. Will the chairman yield to me?

Mr. ROGERS. Yes.

Mr. BUDGE. Carrying that just a little further, Mr. Conover, if these companies were forced to have half of their reserve holdings under lease in one State, perhaps a good many miles away from their plant, there would be more of an incentive to do the type of mining which the gentleman from Texas, the chairman, was talking about than if the lands were adjacent to the plant, would there not?

Mr. CONOVER. It does not work that way. If you have got to have two separate plants, you have got to double a large part of the investment. You can do a much better job actually with a large plant. You can get larger scale operations. You can reduce your mining costs, and you can develop material and mine it you might not otherwise be able to.

Mr. BUDGE. What I am getting at is this: Assume the plant is located in one State, and only half of the total leased acreage can be located in that State, and it were necessary then for the company to go into another State, again on the public domain, and complete the leasing up to the total provided under the law. They would then have to ship the ore to their home plant. Is that correct?

Mr. CONOVER. That is true.

Mr. BUDGE. And take the cream off, so to speak, which would more likely exist under those conditions than under the provisions of this legislation. Is that not true?

Mr. CONOVER. That is true. Your transportation cost, Mr. Budge, is one of the biggest items in the cost of producing phosphate. If you have to transport it a long distance—you simply cannot do it. You simply cannot mine it. We are up against—the western phosphate producers are up against very much lower cost production of phosphate in other parts of the United States, and they should be given every encouragement to acquire the acreage that will justify a large-scale low-cost operation.

Mr. BUDGE. They have to haul their finished product a lot farther than any other area to get to the markets.

Mr. CONOVER. That is true.

Mr. BUDGE. And, if they have to haul the rock, I think it would result in their going out of business, at least in not being able to expand.

Mr. CONOVER. It would seriously handicap them not to have available enough acreage. It would deter progress and expansion of the industry.

Mr. BUDGE. Thank you.

Mr. ROGERS. The only acreage limitation involved insofar as the industry is concerned has to do with Federal lands.

Mr. CONOVER. That is correct.

Mr. ROGERS. I think the record ought to show that, and that Federal lands, according to your testimony, only constitute one-third of the present reserves insofar as these companies are concerned.

Mr. CONOVER. One-third of the present production, that is to the industry as a whole. As to some of the companies that are develop-

ing phosphate production and expanding, they are dependent entirely on Federal land.

Mr. ROGERS. One other question, Mr. Conover: How many of the companies that are associated with the American Mining Congress have, at the present time, used up their acreage in any one State?

Mr. CONOVER. I would have to defer that to some other of the witnesses.

Mr. ROGERS. I believe that is all. Thank you, Mr. Conover, for bringing your fine statement to the committee. We appreciate it.

Mr. CONOVER. Thank you, Mr. Chairman.

Mr. ROGERS. The next group represented is the J. R. Simplot Co., of Boise, Idaho, represented by Mr. Bert W. Dyer, consulting engineer. If Mr. Dyer will come forward, we will hear him.

STATEMENT OF BERT W. DYER, J. R. SIMPLOT CO., BOISE, IDAHO, CONSULTING ENGINEER

Mr. DYER. Mr. Chairman and members of the committee, I am Bert W. Dyer, formerly with the United States Geological Survey in the Department of Mining Operations on the public domain in the States of Idaho, Utah, Nevada, California, Wyoming, and Oregon. I am here today to represent the J. R. Simplot Co.

The phosphate production in the West has had quite a checkered career. In 1942 the total production from Idaho was 115,263 tons, none from Wyoming, 150,402 from Montana, or a total of 265,665 tons. This had increased to a total of slightly over 2 million tons in 1955. In 1942 and prior to that date the production in Idaho was principally from the properties of the Anaconda Copper Mining Co. and the San Francisco Chemical Co. During the Second World War labor was short. The demand for phosphate increased and the then operating properties could not supply the demand. To increase production seemed practically impossible.

The J. R. Simplot Co. furnished phosphate fertilizers for their own lands and those of farmers who produced potatoes. At that time the superphosphates were impossible to get. The Simplot Co. then installed a plant for the manufacture of superphosphates and obtained ore from the Anaconda Copper Mining Co. and the San Francisco Chemical Co. These two producers were unable to furnish Simplot's needs and he leased phosphate lands on the Fort Hall Indian Reservation in Idaho and started to produce his own ore. In these mining operations, a large tonnage of lower grade ore laid above the high-grade ore which he needed. The low-grade ore was mined and stockpiled. In this operation he accumulated large quantities of the lower grade shales of electric furnace grade used for the manufacture of elemental phosphorus. Being confronted with these large shale piles, he then induced Westvaco Mineral Products Division to install an electric furnace. This was completed in 1949 and the second furnace in 1950, and the growth continued until now there are four furnaces.

In 1950 the Victor Chemical Co. came into the West and began the construction of an electric furnace in Montana which was completed in 1951. Soon after that the second furnace was installed. In 1952 Monsanto Chemical Co. completed their first furnace in December and shortly after the second furnace was started and completed.

These activities account for the increase in ore requirements and the increased production of 1955 over 1942.

To install a chemical plant of the nature of the ones mentioned above requires considerable capital outlay and natural resources. These plants are established as close as possible to the ore reserves, electric power, and transportation, and after the plant is once installed it is not economically feasible to move it. Consequently, when a plant is installed, it is expected that it will grow and require greater ore reserves. The growth of these plants in a comparatively short time substantiates the statement.

Phosphate deposits in the West are estimated to contain approximately the same tonnage as those in the East and it is now calculated that either the tonnage in the western reserves or eastern reserves would supply the present demand for 1,000–2,000 years. The present phosphate lands in the West are mostly on the public domain and the acreage now under lease is very small in comparison to the total acreage. Practically none of these phosphate deposits have been geologized in detail and comparatively little drilling has been done, so the tonnage in any one lease is problematical. The area in which the deposits are located is generally covered with heavy overburdens of soil which makes detailed geology difficult and even after they have been geologized and some drilling has been done, the probable tonnage is still problematical, and reasonable large acreage is required if expansion is to take place.

This is also true of other deposits such as potash, coal, and sodium. Considering this, Congress allowed the potash producer to lease in one State 15,360 acres in the first unit; 10,240 acres in a second; 2,560 in fringe areas; and also to hold 51,200 under prospecting permit. They also allow the leasing of 5,120 acres of sodium lands and this may be increased with the approval of the Interior Department to 15,320 acres. The first coal leases were limited to 2,560 acres in one State. This was increased to twice that amount, or 5,120 acres.

It would appear now that it is only reasonable to eliminate the State boundaries and allow 10,240 acres to be leased, either all in one State or in several States, as the present location of the plants would require.

Government leases must conform to public land surveys and these are multiples of 40-acre tracts. The tracts may be underlaid by phosphate ore, or considerable of the acreage may be barren, thus reducing the acreage of phosphate in this lease. No rights are required beyond vertical boundary lines. With fee lands it appears that the owner has extralateral rights and may mine the deposit to great depths beyond the outcrop which is the apex.

The House bill, H. R. 8394, does not increase the acreage but allows the operator to select his acreage to the greatest advantage to his reduction plant. It is believed advantageous to the Government and to the people of the West that this industry be allowed to expand and this can only be done by allowing the operator to hold to the maximum acreage tributary to his plant, whether it be in one State or in several.

Mr. ROGERS. Thank you, Mr. Dyer.

The Chair will recognize the gentleman from Colorado, Mr. Aspinall, for any questions he may have.

Mr. ASPINALL. Mr. Dyer, how many different layers or veins of phosphate are there in the area of these four States that have been mentioned this morning?

Mr. DYER. In some areas it is practically one layer, low-grade ore on the top and a high-grade on the bottom. In other areas there may be as high as from 3 to 5 layers. But apparently the entire phosphate deposit is about of the same thickness. If you got 4 layers, you will have probably about the same amount of ore that you would have in 1 layer. That is not true in every place, but that is generally true.

Mr. ASPINALL. What is the tendency of the present producers? Is it to try to get all of the layers of the ore that they find or is it to go to the rich ore only where they can get to it easily, or first, or second, and leave the other deposits in place?

Mr. DYER. The three large strip operations at the Simplot Co. in the Fort Hall Indian Reservation, they strip the entire deposit, and their low-grade ores go to the Westvaco Chemical Co.'s plant.

Mr. ASPINALL. Do I understand there are only two layers that are involved at that place, there are none below?

Mr. DYER. There are none below that we know of.

Mr. ASPINALL. None below that you know of. They have made attempts to find out, have they not?

Mr. DYER. Pardon me. They have drilled and there is none of economic importance.

Mr. ASPINALL. Would you say whether or not that operation holds true with other company's operations?

Mr. DYER. The Monsanto Chemical Co. in their strip have mined the entire ore body. Anaconda Copper Co. on Sulphur Creek has opened a strip bed, have closed their underground mines, and started stripping. Just what they are doing I do not know. When I was there a year ago they were just preparing to strip and ship ore. I imagine they will take the entire ore body.

Mr. ASPINALL. That is all.

Mr. ROGERS. The gentleman from Nevada, Mr. Young.

Mr. YOUNG. How many companies are producing phosphate in the West today?

Mr. DYER. Your major producers, 2 in Montana, 3 in Idaho, 1 in Wyoming.

Mr. YOUNG. In other words, a total of six?

Mr. DYER. Yes.

Mr. YOUNG. What sort of investment is required in phosphate production in the way of machinery and plants?

Mr. DYER. For the mining or refining?

Mr. YOUNG. Well, for both. Apparently one of the reasons why you want to expand this area is to make it economically practicable for the investment to be made. I wondered just how sizable that investment is.

Mr. DYER. I will estimate it. Take the Simplot Co. Their mining operations, stripping operations, including their railroad, highway, probably is about $2 million. Besides this is an acidulation plant, which I think is about a million dollars. Then Westvaco's electric furnaces, which take his ore, I would say are up around $20 million or better. So you see you have a sizable investment in one operation.

Mr. YOUNG. Assume I have got 10,240 acres out there and I intend to go into the phosphate production business. How much money

would it take for me to get into this if all I have out there now is the land?

Mr. DYER. You mean just to mine the ore?

Mr. YOUNG. Mine and refine, whatever is ordinarily invested.

Mr. DYER. It would depend entirely upon what you did. If you went into electric furnaces, with a large tonnage, you would be up in the same price range of the present operators, anywhere from 15 to 25 million.

Mr. YOUNG. The investment required would be 15 to 25 million?

Mr. DYER. For one of these electric-furnace plants, yes.

Mr. YOUNG. That is all the questions I have.

Mr. ASPINALL. If the gentleman will yield at that place?

Mr. YOUNG. Yes.

Mr. ASPINALL. What has been the experience of Simplot on the original 5,120-acre tract? Have they been able to get their investment back and make a profit?

Mr. DYER. Simplot Co. has very little ore on the public domain. He has the big holdings on the Fort Hall Indian Reservation. He is getting his money back. His expenditure is a good expenditure, it is a good investment.

Mr. ASPINALL. The question of the gentleman from Nevada was, of course, in order because he wanted to know how much a plant costs. But just stating how much the plant costs, without any reference to the return from the usual operation on 5,120 acres, does not mean too much.

As I understood your testimony and the reference that Mr. Conover made, it was that there just was not enough value there to justify that kind of an investment.

Mr. DYER. I do not think that was quite the intent. The extra reserves are needed for plant expansion. Take Westvaco. They went in and built one electric furnace. Then when the demand came on they built the second, and so they went to four. Victor built one furnace, and their market was such that they built the second one. Monsanto built the first one, and market conditions allowed for the second one. And it is hoped by the people of the West that the market will improve and they will have more furnaces.

Mr. ASPINALL. We also have to hope that others who may be interested in the same operation may find lands available and wish their interests should culminate in successful operations.

Mr. DYER. Other companies apparently have not been too much interested. I think all of the major phosphate producers and probably part of the heavy chemical plants have had their engineers, so-called scouts, geologists, in the West looking the deposits over, but none of them have deemed it practicable to come west and make that large expenditure.

Mr. ASPINALL. I can understand the statement Mr. Conover made that there is unlikely to be any corner in the hands of one individual or perhaps one company or two companies. I can also understand the desire to grow and develop and become big, and I am for it. But I also can see the other side of the picture where others may be interested in the future, and they would like to have some participation in the program. I doubt very much if we want to foreclose any possibility that they would be able to take part in such an undertaking.

Mr. DYER. I think, Mr. Aspinall, when you consider all the phosphate that is in the West you are not closing anybody out.

Mr. ASPINALL. In other words, it is your position that even with this bill we have before us, which leaves the ultimate number of acres as it is but does do away with the State limitation and the line limitation, there will be plenty of resources in this particular field left for any who may wish to get into it?

Mr. DYER. And for many years to come.

Mr. ASPINALL. I understood you to say for 1,500 years to come.

Mr. DYER. And that is taken from the Bureau of Mines bulletin recently published. It is not my guess.

Mr. ASPINALL. That is all.

Mr. ROGERS. The gentlewoman from Idaho.

Mrs. PFOST. No questions.

Mr. ROGERS. The gentleman from Idaho, Mr. Budge.

Mr. BUDGE. Mr. Dyer, a few moments ago you stated there were only three companies mining phosphate in Idaho. I would like you to review that a little bit. I can think of your company, Simplot.

Mr. DYER. Simplot; yes.

Mr. BUDGE. Westvaco and Monsanto.

Mr. DYER. Westvaco is not mining; they are buying.

Mr. BUDGE. They are processing?

Mr. DYER. Yes; they are processing.

Mr. BUDGE. They are in the business. And Anaconda, and I think the San Francisco Chemical.

Mr. DYER. The San Francisco Chemical; yes. They are the three majors in Idaho.

Mr. BUDGE. And I noticed recently that a contract was signed for the furnishing of electric power for a new company at Montpelier. I do not think of the name right now.

Mr. DYER. That is the Central Farmers Co-op.

Mr. BUDGE. I think that is correct. So there will probably be a half a dozen companies in Idaho that are in the mining or processing end of the business. Is that correct?

Mr. DYER. That appears to be correct. There is another big one—one of the best tracts, I think, in Idaho is owned by the Western Cooperative Farmers Association, and it has enormous deposits of readily mined ore, probably one of the best in Idaho. I presume that sooner or later that will be operated and processed.

Mr. BUDGE. The major portion of this development has been very recent, since World War II, has it not?

Mr. DYER. It has.

Mr. BUDGE. I yield to the gentleman from Nevada.

Mr. YOUNG. There is a memo here which is entitled "Federal Phosphate Leases Outstanding by States as of January 25, 1956," which shows some 23 companies in 4 different States, giving the number of leases and total acreage leased. Another column has "Additional Acres Now Obtainable." It looks from this memo that everyone of the 23 companies apparently could obtain additional acres under the present maximum limitation if they so desired, which seems somewhat inconsistent with the statement that there apparently is need now for larger acreage allowance. Could you explain to me the apparent inconsistency? Or do I understand this memo correctly?

Mr. DYER. What I think, there are so many small companies, 20, 40, 80, 160 acres. I am consulting engineer for the Independent Coal & Coke Co. Our president has a phosphate lease in Utah, I think, about 900 acres. That is more than he can operate and take care of. Your costs are too high unless you have an available market.

Mr. YOUNG. I note on this memo that J. R. Simplot Co. has total acres leased of 2,994.94 and additional acres now obtainable of 2,125.06. Does that mean that your company could lease that many additional acres?

Mr. DYER. Yes.

Mr. YOUNG. But they have not so done?

Mr. DYER. They have not.

Mr. YOUNG. That is in Idaho only.

Mr. BUDGE. Will the gentleman from Nevada identify the memo, what it is, and the source of it?

Mr. YOUNG. It is a memo which was given to me by Mr. Soule here.

Mr. BUDGE. By whom was it prepared?

Mr. SOULE. I prepared it from the list of leases given to us on January 25 by the Bureau of Land Management.

Mr. BUDGE. That is what I wanted to know, just where it came from.

Mr. SOULE. Mr. Rogers has the official document before him.

Mr. ROGERS. The information that Mr. Soule obtained was part of the original record in the previous hearings which I referred to.

Mr. BUDGE. I just wanted to identify the document for the record.

Mr. ROGERS. Yes.

Mr. YOUNG. One other question. With regard to the acreage and time which 5,120 acres would permit operations, assuming an ordinary phosphate deposit and the existence of 5,120 acres for your company, how long would your company be able to continue operation at its present rate of production if it possessed that much acreage with ordinary quality deposits?

Mr. DYER. That is a rough one to try to answer. You may take up a phosphate deposit, and again you may think that you have that full acreage of good ore, but afterwards it turns out that through erosion or probably leaching you do not have your ore you thought. I would say any company starting out would look for probably 50 years' reserves.

When the Coal Leasing Act was enacted the leases were set up so it was expected that the coal reserves in any one lease would last approximately 50 years, and the terms of the lease were set up on that basis.

Mr. YOUNG. Would that apply to the present maximum acreage allowance of 5,120 under ordinary circumstances—of 50 years?

Mr. DYER. In coal?

Mr. YOUNG. No, in phosphate which we are discussing.

Mr. DYER. Again you have got to do a lot of speculation. You take a Government lease. You take it up in 40-acre tracts. You have a long outcrop and you take these 40-acre tracts along the outcrop. Maybe the greater part of that 40-acre tract, maybe not over a quarter of it will contain phosphate ore, and three-quarters will be barren land. And again it may have the full 40 acres of phosphate. I would think that any one company going in for a large initial investment would want at least 30 to 40 years of ore in sight, and that would include ore where they expect it to have expansion.

Mr. YOUNG. Presumably all of these companies that have gone in already have that in mind. We have got 23 of them here, perhaps more, none of whom have utilized the maximum now permissible.

Mr. DYER. You look over the list, and most of them are small people. What they take this out for, I suppose they imagine they can go out and do some mining and sell their ore to processing companies and make some money. That is the instinct in mining.

You have got Western Fertilizer, which I would say has a wonderful lease, yet they only have got 1,500 acres under lease. Yet in that lease they have a very large reserve.

Mr. YOUNG. I yield back to the gentleman from Idaho.

Mr. BUDGE. I have no further questions.

Mr. ROGERS. The Chair recognizes the gentleman from Montana.

Mr. METCALF. I have no questions.

Mr. ROGERS. The Chair recognizes the gentleman from California, Mr. Utt.

Mr. UTT. No questions.

Mr. ROGERS. Mr. Dyer, just 1 or 2 questions.

The Simplot Co., the company you represent, has holdings about equal in both the States of Idaho and Montana?

Mr. DYER. Yes, sir.

Mr. ROGERS. In which State is it that you want to increase your holdings?

Mr. DYER. In the case of the J. R. Simplot Co., at the present time they do not need to increase their holdings in either State. The holdings they have now will take care of what market they have, but they do not know when the market will increase or it will pay to start another operation.

Mr. ROGERS. When you refer to the holdings of the Simplot Co., you are not referring merely to the holdings of Federal land?

Mr. DYER. I am referring now to the holdings on the Centennial Range, two new leases, approximately half in Montana and half in Idaho.

Mr. ROGERS. What are the holdings of the Simplot Co. insofar as acreage is concerned, the entire holdings?

Mr. DYER. I suppose close to 5,000 acres.

Mr. ROGERS. Is this just Federal land listed on here? What I am talking about is your additional land, not just the Federal land, but your private-fee land and your Indian lands.

Mr. DYER. I say, with these Federal lands and fee lands and Indian lands, I would imagine the total acreage was somewhere about 4,000 to 5,000 acres.

Mr. ROGERS. That is the thing I was wondering about here. This reflects that you have in Idaho 2,994 acres and in Montana you have 2,330 acres, which is more than 5,000 acres of Federal land alone.

Mr. DYER. Those two leases were just issued, and they have not given too much consideration to the Montana side yet. The operations will be first started on the Idaho side.

Mr. ROGERS. Mr. Dyer, you mean then, as the matter presently stands it would be your estimation that around 5,000 acres would be sufficient to justify the investment that has been made by the Simplot Co., and that you are not in need of any further acreage at this time and will not be for quite a while unless there is a sizable increase in the market demand?

Mr. DYER. On the Fort Hall Reservation the Simplot Co. has an extremely fine deposit, and the recovery of ore from that is much greater than in most of them. It depends upon your deposit what acreage you need, and on the reservation that is a very fine deposit. It is strippable. It is fairly flat and you can strip a great part of it. The land on these two last leases on the Centennial Range, there will be some stripping land there. Then it will be underground mining from then on.

Mr. ROGERS. Do I gather from your statement that the richness of the deposit to which you refer on this Indian land was what justified the sizable expenditure made by the Simplot Co. in putting these facilities into operation in this area?

Mr. DYER. The Simplot Co., when they put in their plant to make superphosphate, they had to have around 30 percent P_2O_5 ore. So to get that ore he had to strip, he had to take over about 30 or 40 feet of overburden of low-grade ores.

The Geological Survey, which does the supervision of the land for the Indian Service, insisted that he remove his soil and then take his low-grade ores and store them. It was thought at that time, in storing these ores, they would be processed sometime in some way. Mr. Simplot got too much money tied up in the stockpiles, and he induced the Westvaco Co. to come in and put those electric furnaces in. That was the starting of the electric furnace in the West.

I think if it had not been for that case Monsanto and Victor would not have come in at this time. So I think Simplot was directly responsible due to unforeseen conditions for the electric furnaces in the West at this time.

Mr. ROGERS. Mr. Dyer, though, at the time he did that, he made a pretty sizable investment, did he not?

Mr. DYER. Yes, sir.

Mr. ROGERS. It required quite an expenditure. Now, a good businessman, unless he thought he was going to make a pretty good investment, would not have moved in there, would he?

Mr. DYER. He would not have.

Mr. ROGERS. What year was that; do you recall?

Mr. DYER. He moved in somewheres about 1941, I think.

Mr. ROGERS. What I am getting at is this: At that time, of course, the right to hold Federal public lands was 50 percent of what it is today, was it not?

Mr. DYER. Yes, sir.

Mr. ROGERS. And that was increased by the 80th Congress, that is, it was doubled in the 80th Congress up to the present 5,120 acres. Did your group testify in the hearings at the 80th Congress asking that the 2,600-acre limitation be increased to 5,100 acres?

Mr. DYER. I do not know. I was not with the Simplot Co. at that time.

Mr. ROGERS. What I was wondering, if that was the case at that time, why they did not ask that this be increased in this manner then.

Mr. DYER. I think that was on account they did not realize probably the extent this mining would go to. Just like I say, when Westvaco came in they came in with 1 small electric furnace, and they went to 4. Monsanto came in with 1, and they went to 2. Victor came in with 1, and they went to 2. The business has been growing.

Mr. ROGERS. Let me ask you this one question: In your opinion—and you are thoroughly familiar with it—is there any danger of any of those companies going broke and getting on the verge of bankruptcy if this bill does not pass?

Mr. DYER. I do not think there is.

Mr. ROGERS. Most of them have made investments out there based upon sound principles and knowing what they had to look forward to in the future, have they not?

Mr. DYER. They have, but they cannot figure their expansion.

Mr. ROGERS. I understand that. Now let me ask you this with regard to the Federal lands—before that, there is still one question in my mind: You keep talking about expansion, and there is one question still in my mind as to whether or not additional holdings of 5,000 acres in 1 State would meet all of the requirements that are anticipated for expansion. It seems rather odd to me. If we are going to have an expanded market, maybe this bill should be increased to 20,000 acres instead of 10,000 acres so they would not have to be back here again in another session of Congress asking that it be doubled again.

Mr. DYER. Mr. Chairman, I do not think anybody would take that amount of acreage. The obligation is too great under Federal leases to take 20,000 acres.

Mr. ROGERS. As I understood Mr. Conover's testimony, 85 percent of the reserve of this phosphate is now in or on Federal lands.

Mr. DYER. Yes, sir; but when you take a lease from the Government, you have obligations. You have to pay rental and other obligations to meet, and I do not think a company would take beyond what they think they need to make their company healthy for a long period of time. I do not think they would go up and take up land and make the expenditures required by the leases unless the land was really needed.

Mr. ROGERS. Let me ask you one more question about this situation. What does the Federal Government get out of these particular leases that Simplot holds?

Mr. DYER. On the reservation Simplot pays them 30 cents a ton.

Mr. ROGERS. I am talking about Federal lands now.

Mr. DYER. On the Federal land I think all of these companies pay 25 cents a ton for the ore they mine.

Mr. ROGERS. Twenty-five cents a ton. What do they pay on Indian lands?

Mr. DYER. They pay 30 cents.

Mr. ROGERS. What do they pay on private lands?

Mr. DYER. I do not know.

Mr. ROGERS. Some of these lands, of course, they own in fee; do they not?

Mr. DYER. Yes.

Mr. ROGERS. But do they lease some private lands? Does your company lease some private lands, lands from private individuals to whom they pay a royalty?

Mr. DYER. I do not think so. I know we are not operating any, and I do not think we have any under lease. There could be. I would not say there was not.

Mr. ROGERS. How much do you have in fee ownership? Do you have any idea about that?

Mr. DYER. I think it is practically nothing.

Mr. ROGERS. Practically nothing?

Mr. DYER. Yes.

Mr. ROGERS. There is the Federal lands, there is the Indian lands, there is the private lands, of which you say you have none. Do you have any State lands?

Mr. DYER. The Simplot Co. has some State lands. I do not know just what.

Mr. ROGERS. Do you know what kind of fees they pay on those?

Mr. DYER. I believe the States collect the same as the Federal Government. In general the States have followed the Federal Government.

Mr. ROGERS. Twenty-five cents a ton?

Mr. DYER. Yes.

Mr. ROGERS. Do you have any other lands? Are there any of those lands that have been given to the counties or political subdivisions?

Mr. DYER. I think some of those lands have gone back to the county or the Staate. I just do not know what the process was, whether the people took up mining claims and they did not pay the taxes and they reverted to the county or State. That is probably what happened.

Mr. ROGERS. Does the Federal Government get any original bonus payment in your bidding on the leases?

Mr. DYER. I do not think there is but very little bonus paid.

Mr. ROGERS. It is more than a royalty base; is it not?

Mr. DYER. Yes. The bonus payment is somewhat overdrawn.

Mr. ROGERS. Somewhat what?

Mr. DYER. Overdrawn. I think the Turteling Co. up there paid around $100,000 for a lease. But if they operate, the amount of money they will pay in royalties exceeds that so much it makes the bonus payment practically nothing. The only reason for the bonus payment is to give competition. They want to give every man a fair chance.

Mr. ROGERS. Do you have any requirements insofar as rental payments are concerned if you do not develop and produce phosphate off of some of these lands?

Mr. DYER. They pay 25 cents an acre the first year, I think 50 cents an acre the next 3 years, and then again with a dollar an acre.

Mr. METCALF. Will the chairman yield?

Mr. ROGERS. I will be glad to yield.

Mr. METCALF. I think I recently read that Simplot is opening up another plant in Montana. Is that correct?

Mr. DYER. Yes, sir.

Mr. METCALF. From your testimony, as I understand it, you said that the primary justification for most of your reserves for your plant in Idaho were these reserves down at Fort Hall Indian Reservation.

Mr. DYER. Yes.

Mr. METCALF. And your leases of public domain lands were secondary and of lesser importance.

Mr. DYER. I did not quite mean that. The Idaho leases are intended to furnish the electric furnaces at Pocatello. The leases on the Montana-Idaho boundary are intended for rock that will go to Montana and supply the furnaces up there and into Canada.

Mr. METCALF. In this new plant in Montana, are you going to use rock from the Fort Hall Reservation, too?

Mr. DYER. The Fort Hall Reservation will send their rock to the Pocatello plant, the Westvaco Co.

Mr. METCALF. So the Montana plant would be dependent more upon phosphate from the public domain land; is that correct?

Mr. DYER. I did not get that.

Mr. METCALF. Would the Montana plant then be dependent upon the leases of public domain land for phosphate?

Mr. DYER. Yes.

Mr. METCALF. Then, if this bill passes, you would probably have a greater amount of public domain land leased in Montana in order to take care of the needs and the reserves of your new plant in Montana. Is that correct?

Mr. DYER. Yes. You see, the lease in Montana and Idaho, that deposit is a continuous deposit, just a division line there of the river. So you might say you are working in the same deposit. That is a happenstance. You have the same deposit on either side, the same ore.

Mr. METCALF. So this does not make a great deal of difference to you then?

Mr. DYER. No.

Mr. METCALF. If you are working the same deposit, you could have 10,240 acres, with 5,120 on one side of the Idaho-Montana boundary and 5,120 on the other side?

Mr. DYER. Yes. You take a deposit, say, in the middle of a State——

Mr. METCALF. That would not be so advantageously situated?

Mr. DYER. No. They would need the resources tributary to their plant. If these plants could be located and the reserves were such you could have them close to a State line, then you could take half on one side and half on the other, and it would make no difference. But the phosphate deposits are not located that way.

Mr. METCALF. The phosphate deposits are located in the middle of Idaho?

Mr. DYER. They are located near the middle. As I say, you put your plant accessible to the greatest ore reserves. Your transportation and your electric power—in the phosphate electric furnace business electric power is the big item.

Mr. ROGERS. Are there any other questions?

Thank you very much, Mr. Dyer, for your testimony.

Mr. DYER. Thank you, Mr. Chairman.

Mr. ROGERS. The next group to be heard is the Westvaco mineral products division of Food Machinery & Chemical Corp., New York. Who will represent them?

STATEMENT OF HENRY MESSMAN, REPRESENTING THE WESTVACO MINERAL PRODUCTS DIVISION OF FOOD MACHINERY & CHEMICAL CORP., NEW YORK

Mr. MESSMAN. I will, Mr. Chairman. My name is Henry Messman. I represent the Westvaco mineral products division of Food Machinery & Chemical Corp:

Mr. ROGERS. Would you tell us what Westvaco means?

Mr. MESSMAN. Yes, sir. Going back to around 1926 we had an old plant in Charleston, W. Va., previously operated as the Warner-Klip-

stein Co., a World War I job. We reorganized that and wanted a name for it. Being in West Virginia, we condensed West Virginia Co. to Westvaco and called it Westvaco Chlorine Products Corp. We have had a lot of changes since then. Subsequently it was changed to Westvaco Chemical Corp., and then we were merged with the Food Machinery & Chemical Corp. in 1948.

Mr. ROGERS. Thank you very much, sir. You may proceed.

Mr. MESSMAN. We favor an increase in the maximum acreage of Government-owned phosphate land, that one lessee may hold in any one State, from 5,120 acres to 10,240 acres as proposed by H. R. 8394.

I think it is clear to everyone here that no overall increase is being asked. We are just asking for elimination of the State line barrier.

Westvaco pioneered the use of western phosphate ore for production of elemental phosphorus by the electric furnace method. Our first furnance near Pocatello, Idaho, was completed during 1949 and three more have been installed since that time. Each succeeding furnace has been larger than the preceding one, and all four have been expanded beyond original design capacity. This gives us by far the largest operation of its kind west of the Mississippi River. Each furnace represents a multimillion dollar investment, which obviously should be supported by very large ore reserve. Present acreage limitations complicate the problem of establishing and maintaining adequate reserves.

As compared with eastern competitors, western phosphorus producers have a number of serious economic disadvantages, for examples, the cost of transporting our product to the principal market areas is greater than is the case of folks in the East. We need a lot of coke in these electric furnaces. There is just not too much coke produced in the inter-mountain area or even on the west coast, so we have to haul it further and our delivered cost is higher so continuation of this 5,120-acre limitation would be another handicap to growth of the western phosphorus industry.

Our Government has already recognized the changing requirements of industry by increasing acreage allowable in the case of several other mineral resources; so that the proposed 10,240 acre limit will still be small in comparison with those applicable to potash, soda salts, and so forth. In the case of both potash and soda salts (excepting sodium chloride), apparent reserves are less than in the case of phosphate. In this bill, however, no overall increase is proposed. We merely ask that a State line retriction be removed.

Thus we respectfully urge your committee to report favorably on H. R. 8394, and further solicit your individual support for this bill when it comes before the House of Representatives.

Mr. ROGERS. Thank you, Mr. Messman, for your brief and concise statement.

Mr. Aspinall, do you have any questions?

Mr. ASPINALL. Mr. Messman, from the statement I understand that you have been connected with this operation for some time. From the statements previously made, it is my understanding that the operation that is now going on can go on for some time. Can you advise the committee just how long the present operators could conduct their program and production programs without this additional acreage?

Mr. MESSMAN. That is difficult for me to say. As has been pointed out before, we were forced into this thing very rapidly, and we have

been buying most of our rock. Now, that is not a very good position to be in, and we are getting ready to do something about it. We are looking to the future.

Also, as you well know, it is very handy to have some mineral depletion credit when you are figuring taxes. We look at that as well.

At the moment we have nothing like adequate reserves. We own a little land in fee. We have a little Indian land, and I think we have one very small piece of the type of land that we are now discussing. We have bought most of our ore requirements so far from the Simplot Co. and a little from some other companies.

Mr. ASPINALL. Of course, I think that the matter resolves itself around what is said to be a reasonable length of time for control of reserves. If the present operations have reserves that will carry on for 50 or a hundred years, I think perhaps that is a reasonable length of time. If they do not—and I hope the hearings bring out this point—then we should know about it.

There is a possibility, I suppose, that because of some of the unleased lands lying close to present facilities of transportation or water or other natural resources, it would be well for a company having an operation within the immediate area to gain more reserves, if possible, which that company would not use for the next 50 years or a hundred years, or maybe 200 years. Is there any possibility of that situation existing here?

Mr. MESSMAN. There may be such a possibility. Again, in our case, we are just getting started, and we would like to get something like 50 years' reserves. Naturally we would want to get them as near to our operation as is reasonably possible.

There are several things to consider: Cost of operation, quality of the property, or at least your guess on the quality of the property and the gamble that you take. Some property you can drill and be pretty sure it is going to be this, that, or the other thing. Others you are never sure of.

Mr. ASPINALL. I understand that, but as far as I am personally concerned, if the operations can go on for 50 or a hundred years as presently conducted, that is one thing.

Mr. MESSMAN. Yes.

Mr. ASPINALL. If it cannot go on and more reserves are needed to firm up the operation within the next 25, 40, maybe 50 years, that is something else. I hope the hearings will bring that out, also the matter of trying to get hold of additional reserves which lie close to present facilities which are needed in the mining and refining of this resource.

That is all.

Mr. ROGERS. The gentleman from Nevada.

Mr. YOUNG. Apparently the present acreage limitation does not impinge heavily upon the Food Machinery & Chemical Corp., judging from the figures on this memo which was referred to earlier. It shows the total acreage leased now is 80, additional acres now obtainable would be 5,080.

Mr. MESSMAN. Yes. As I say, we are just getting started in that direction, however. We have purchased some land in fee, and we do have one Indian property, but we are still buying nearly all of our rock. It is hard for us to say just what we are going to need and what kind of properties we can get. It may quite well be possible that we

would need 5,000 or 6,000 acres to build up reserves to the 40 or 50 years as we would like to have.

Mr. YOUNG. What do you pay for your rock now?

Mr. MESSMAN. You have got to go into a matter of quality. We buy most of it as a very low-grade rock that would not be suitable for some purposes. I am a little hesitant to answer that question; but would say around $2 a ton. Some of the high-grade rock will run $5 or $6 a ton. We sometimes blend a little of that in.

Mr. YOUNG. You pay that to Simplot for the ore you get from them?

Mr. MESSMAN. That is right.

Mr. YOUNG. They, in turn, pay the Government 25 cents per ton?

Mr. MESSMAN. That is right, if Simplot is mining Government land.

Mr. YOUNG. If you are able to get a lease, say, on 5,000 acres under the present limitation and the lands were of minimum quality as far as ore reserves are concerned, how long would that enable your company to continue operations as at present?

Mr. MESSMAN. We would have to consider the specific piece of land. I think maybe the best way to answer that is to tell you that at the present time our ore requirements are around 700,000 tons a year. That is a fair estimate for this year in any event.

Mr. YOUNG. How many tons of ore would there have to be on 5,000 acres of land, say, of minimum quality, which you would consider leasing?

Mr. MESSMAN. That is something I am not competent to answer. We would have to take the individual piece of property being considered and ask our mining people.

Mr. YOUNG. I think you must give some yardstick to your mining people and say, "We will not accept land that has less than 700,000 tons per hundred acres" or something like that.

Mr. MESSMAN. I think we would be more inclined to say, "Now you look at this piece of land and the overall prospects. What is the ore going to cost us delivered at our plant?" A piece of land that is hard to mine or is far away would be a different proposition than one that was nearby.

Mr. YOUNG. I am trying to translate this acreage into activity of——

Mr. MESSMAN. I am just not competent to give you an answer. I think there may be some people here that can do better; but I am not competent to give you a good answer.

Mr. YOUNG. That is all the questions I have.

Mr. ROGERS. The gentlewoman from Idaho.

Mrs. PFOST. No questions.

Mr. ROGERS. The gentleman from Idaho.

Mr. BUDGE. No questions.

Mr. ROGERS. The gentleman from Montana.

Mr. METCALF. No questions.

Mr. ROGERS. The gentleman from California.

Mr. UTT. The only question I have—possibly it is more an observation—but I cannot see why your company would come for an extension of this bill when you have not used 5 percent of the land you are entitled to in 1 State even.

Mr. MESSMAN. Again, as I say, we should have done something about this a long time ago, but we are just getting started building our own reserves.

Mr. UTT. You have four furnaces now?

Mr. MESSMAN. That is right, and we have been dependent on purchased ore.

Mr. UTT. What percentage do you purchase as against what you mine on the 80 acres?

Mr. MESSMAN. I would say last year we purchased over 90 percent, probably over 95 percent. I do not have the exact figures.

Mr. UTT. Are you in the process now of acquiring more leases?

Mr. MESSMAN. We have a mineral development department that is looking, exploring, investigating and we hope to bid for more leases, yes, sir.

Mr. UTT. How many acres do you expect to acquire in the next 2 years?

Mr. MESSMAN. There again, that question is very difficult to answer. It depends on how good the property is. It is something I just cannot answer in terms of acres. I could answer in terms of tons, but not in terms of acres.

Mr. UTT. That is all, Mr. Chairman.

Mr. ROGERS. Mr. Messman, how many acres does your company have in reserve at the present time?

Mr. MESSMAN. I am ashamed to say that we probably have in total less than 2,500 acres, and of that amount I think only 80 acres is land of the type considered in this bill.

Mr. ROGERS. Federal land?

Mr. MESSMAN. Yes.

Mr. ROGERS. The rest of it, I assume, is State land and Indian land.

Mr. MESSMAN. Yes; the rest of it is divided between Indian land and a piece of property we bought in fee.

Mr. ROGERS. I was going to ask if you owned any in fee.

Mr. MESSMAN. Yes; we have one property in fee. I do not know the exact acreage of it. I imagine Mr. Dyer would.

Mr. ROGERS. I notice the Federal holding is listed under the Food Machinery Corp. Is Westvaco a subsidiary of that corporation?

Mr. MESSMAN. Our division is just a part of the Food Machinery & Chemical Corp. When this thing started we were an independent company, and in 1948 we were merged. Now we are just a division of Food Machinery & Chemical Corp.

Mr. ROGERS. You are not a separate entity at all?

Mr. MESSMAN. We operate as a separate division, but corporately we are all one thing.

Mr. ROGERS. What I am getting at—there would not be any way of Westvaco to get 5,000 acres and Food Machinery to get 5,000 acres?

Mr. MESSMAN. There is no way to do that.

Mr. ROGERS. That is the thing that was concerning me a little bit, the fact that no effort apparently had been made by the Food Machinery Corp. or Westvaco to acquire any Federal holdings, and I was wondering how long you had been operating out there.

Mr. MESSMAN. We have been operating since 1949. I might enlarge that thing a little bit.

Mr. ROGERS. About what size investment did you go in there with, Mr. Messman?

Mr. MESSMAN. Did we go in on the first furnace?

Mr. ROGERS. Yes.

Mr. MESSMAN. At that time, I would say it was on the order of 5 or 6 million dollars.

Mr. ROGERS. That was prior to the time that the acreage was increased from 2,600 to the present 5,100?

Mr. MESSMAN. Yes.

Mr. ROGERS. Or just about the same time. I am wondering if you know, Mr. Messman, what commitments you required from the Simplot Co. or other companies insofar as a reserve is concerned. Certainly there must have been some definite fixed agreement that could not be broken to guarante you at least the opportunity to recover your investment of 5 or 6 million dollars.

Mr. MESSMAN. I do not know that it was put in writing at the time specifically on a reserve basis, but I do know that we were thinking in terms of at least 20 years.

I would like to enlarge on that a little bit, though, and say we have been in the phosphate business for 60 or 70 years. We were dependent on other people to supply us phosphorus, and all at once in 1946 or 1947 and they just could not do it any more, or would not. So we had to move in a hurry, and did not do as careful a job of lining up reserves as one ordinarily should.

Ever since we first went in there the demand for our product has pushed us, and we were trying to make more and more phosphorus. We probably did not do as good a job of thinking long term as we should have. We are trying to do something about that now.

Mr. ROGERS. Business has picked up immeasurably, of course, since that time?

Mr. MESSMAN. Yes.

Mr. ROGERS. If you had known in the beginning it was going to increase, you probably would have followed a different course on the subject of reserves?

Mr. MESSMAN. I think so. I am sure we would have.

Mr. ROGERS. Is there any danger, Mr. Messman, of your company getting into financial difficulties in the event this is not passed?

Mr. MESSMAN. I would hate to say if this bill is not passed we are going to get into financial difficulties. I could not make a statement like that. On the other hand, I can say that the return on investment so far in that area is a little disappointing.

Mr. ROGERS. What is it on a percentage basis? Could you give an estimate of that?

Mr. MESSMAN. After taxes, around 4 percent.

Mr. ROGERS. The reason I ask that, sometimes an investment is disappointing to one man and might be good to another.

Mr. MESSMAN. That is right.

Mr. ROGERS. I had 1 or 2 small investments that were disappointing because I did not make 50 percent. [Laughter.]

Mr. MESSMAN. It is a relative risk. When one gambles on a thing like this, I think he is entitled to a little bit better than we have done.

Mr. BUDGE. Mr. Chairman?

Mr. ROGERS. Mr. Budge.

Mr. BUDGE. I think it might be interesting, Mr. Messman, if you described the end results of what is made of this elemental phosphorus you produce out there, what eventually comes from your product.

Mr. MESSMAN. Yes. As a matter of fact, a while ago I thought it might be a good idea if we clarified this whole picture, the two types of processes.

First, you have the mining operation itself. Let's call that one. If you were in Florida, you might have a mining operation without any of these other things because there is a market there for rock. You have people who buy rock to make fertilizer and other products.

In the West that is not always true. You usually have to have a mine tied into one of two things. There are two principal ways of using phosphate rock. One is the old conventional or old-fashioned method by means of which the large percentage of fertilizer in the country today is made. You take the rock and mix it with sulfuric acid to make super-phosphate that way. That is, for example, what Mr. Simplot does in his own operation.

The other thing you can do, and the thing that we do, is to take this rock and put it through electric furnaces. It requires a much higher investment, but you make elemental phosphorus from which you can make a much purer acid or chemical grade product. It is true we put a little of our acid in fertilizer, but if you want a very pure acid for chemical grade or food grade phosphates, you need what we call white acid, and that is made from this elemental phosphorus that comes out of furnaces.

What do we do with that? We ship the elemental phosphorus to plants in various parts of the country—Carteret, N. J.; Lawrence, Kans.; Newark, Calif. There we burn it and make phosphoric acid out of it. There is some phosphoric acid used as such—soft drinks, if nothing else. It is beginning to be used in the cement industry for oil well business cement. That is a new one. It is beginning to be used directly in cattle feed and so on, but the largest portion of it is converted. You take phosphoric acid and react it, as a rule, with soda ash to make a large line of sodium phosphates. Depending on the proportion and the calcine, you can get a dozen of them.

The biggest tonnage item today is what we call sodium tripolyphosphate, and far and away the biggest tonnage of that goes into the synthetic detergents that have been developed in the past 10 years—products such as Tide.

Mr. BUDGE. Such as "Duz does everything"?

Mr. MESSMAN. I am not sure about Duz. I think Duz is a soap. Tide and things of that sort usually contain sodium tripolyphosphate. By that, I mean perhaps 40 percent more or less.

To give you a rough idea, I would say that something on the order of 500,000 tons of tripolyphosphate is produced in this country every year.

Then there are a lot of other phosphates. Getting down to a small tonnage item, there is a sodium pyrophosphate which is used in baking powders. Old-fashioned trisodiumphosphate used to be at least in all of the heavier cleaners. Disodiumphosphate is used in drugs, in boiler water treatment, and in all kinds of things. The list is very long. There are potassium phosphates which we make very much the same way and for similar uses.

Mr. ROGERS. Thank you, sir.

The Chair might say, if anyone wants to insert any remarks about other soap products, we will try to be impartial. [Laughter.]

Thank you very much for your interesting testimony.

It is 15 minutes to 12. The Chair understands the conference report on the agricultural bill will be presented the first thing on the floor, and he wishes to finish as quickly as possible.

(Discussion off the record.)

Mr. BUDGE. Mr. Chairman?

Mr. ROGERS. Mr. Budge.

Mr. BUDGE. Before you adjourn, may I ask one question?

Mr. ROGERS. Yes.

Mr. BUDGE. I note that Mr. Edward Woozley, who is director of the Bureau of Land Management, is in the room. I would like to ask Mr. Woozley whether there has been any change in the position of the Bureau of Land Management since the report sent to us by the Assistant Secretary of the Interior under date of September 14, 1955.

Mr. WOOZLEY. No, sir. As far as I know, Mr. Budge, the report is still the same as given by the Department on January 25 in favor of the bill, and I am quite sure the Department feels the same and the report will be the same as it was last January.

Mr. ROGERS. The Chair had in mind adjourning and reconvening at 2 o'clock if it meets with the approval of the committee members and is not inconvenient to the witnesses. I think we will be able to finish up this day's testimony insofar as three other groups are concerned.

Mr. Soule calls my attention to the fact there is one other group that wants to be heard today or can be heard today. So at 2 o'clock we will hear Mr. King of the San Francisco Chemical Co. Then we will adjourn until tomorrow and conclude the hearings on Friday if necessary to go over.

The commmittee will stand in recess.

(Whereupon, at 11:50 a. m., the subcommittee recessed to reconvene at 2 p. m., this same day.)

AFTERNOON SESSION

Mr. ROGERS. The Subcommittee on Mines and Mining will come to order for the further consideration of H. R. 8394.

The Chair wants to make this observation at this time before we go into further testimony: that it is contemplated that these hearings will be printed, and in view of the fact that this matter involves the use of numerous maps, it is suggested that anyone desiring to contain maps that might be colored in their testimony, try to work them out so that they may be used on a black-and-white basis, with proper legend to indicate what is intended to be conveyed.

I believe our next witness is Mr. D. L. King, president of the San Francisco Chemical Co. If Mr. King will come forward, we will recognize him and hear his statement.

STATEMENT OF D. L. KING, PRESIDENT, SAN FRANCISCO CHEMICAL CO., OF MONTPELIER, IDAHO

Mr. KING. Chairman Rogers and members of the subcommittee.

Mr. ROGERS. Will you state your name and whom you represent?

Mr. KING. My name is D. L. King. I am president and general manager of the San Francisco Chemical Co. of Montpelier, Idaho.

Mr. ROGERS. You may proceed with your statement.

Mr. KING. The San Francisco Chemical Co. is a corporation which has been engaged in the mining of phosphate rock in the Western

United States since 1906. It is the largest producer of phosphate rock for general use in the Western United States. It operates phosphate mines in Idaho, Wyoming, and Utah, employing both surface and underground forms of mining. It is the pioneer operating company in the field; being the first to produce commercial quantities of phosphate rock by underground recovery methods, and the first to conceive and develop the surface mining techniques that are now in common use in the Western United States.

Commercial deposits of phosphatic rock and shales are now found in four Western States, Idaho, Utah, Wyoming, and Montana. The phosphatic section of the phosphoria formation of Idaho, Utah, and Wyoming consists of a series of beds of varying grades of a total thickness of up to 225 feet, with the average thickness in these States being approximately 180 feet. Originally deposited during Permian times by physiochemical precipitation on the bottom of an epicontinental sea, these beds have been subsequently folded and eroded until they are now found in various positions relative to the existing land surfaces and with varying dip slopes. The individual beds continue to be easily recognizable as an aid to estimating the approximate grades and tonnages of rock contained therein.

Much of the phosphate rock mined in the West is used for the production of phosphoric acid, superphosphate and treble superphosphate through the treatment of ground rock with sulfuric acid. Rock of a P_2O_5 content in excess of 30.5 percent is required for this use. The bulk of the remaining phosphate rock is used as feed for electric furnaces for the production of elemental phosphorous. Shales of a P_2O_5 of from 24 to 26 percent are most economically used for this purpose.

I might point out at this juncture that the testimony given this morning made mention of the fact that the western fields were at a considerable disadvantage with respect to overall costs. I would like to point out that the State of Florida, which produces approximately 84 percent of the phosphate rock that is produced in the United States has only one electric furnace plant, the reason being that the power rates in Florida are not consistent with the western power rates. While the rock itself in the State of Florida is extremely high grade and very cheap the competitive position, when you consider the entire costs of the production of elemental phosphorus, is related more to the price of power than it is to the price of rock the ratio being approximately 6 to 1.

Mr. BUDGE. Mr. Chairman, could I ask a question there?

Mr. ROGERS. Mr. Budge.

Mr. BUDGE. We have had a number of witnesses before this committee that stated that the power rates in Idaho were so high as to preclude development of the phosphate deposits, and you are saying just the opposite.

Mr. KING. Mr. Budge, I am not saying the opposite, I am saying that the power rates in the State of Idaho are lower than they are in the State of Florida.

Mr. BUDGE. And development has gone forward in Idaho much faster than it has in Florida——

Mr. KING. For that basic reason.

Mr. BUDGE. Of the electric process.

Mr. KING. That is correct.

The engineering data which follows applies principally to the States of Idaho, Wyoming, and Utah. The acreage data is limited to the State of Idaho. Idaho is not only the center of mass of the western phosphate deposits, containing as it does more phosphate rock than all the other Western States combined, but it is also the State in which the protagonists of this legislation have reached nearly their maximum allowable acreage of Federal land under the present leasing act.

PROTAGONISTS' CONTENTIONS

The arguments advanced in support of the proposed bill appear to be as follows:

1. That the increase in the permissible acreage in a single State would encourage the exploration and development of greater tonnage of phosphate rock than would be true under present laws.

2. That additional acreage is needed to supply adequate reserves to the operators of rock-processing plants.

We believe that the facts compel a contrary conclusion on both points.

DISCUSSION

The present law limiting Federal lease acreage dates only back to 1948 (S. 1006, Public Law 576, 80th Cong., 3d sess., June 1948). In that year the permissible acreage in any State was increased from 2,560 acres to the present limit of 5,120 acres. Shortly after the amendment which is referred to, the dean of western phosphates, E. M. Norris, presented a paper to a meeting of the Idaho Mining Association, held at Sun Valley, Idaho, on June 14, 1949, which seems equally relevant today. Mr. Norris said:

> In Idaho the outcrops occur in eight of the eastern counties—Clark, Fremont, Teton, Bonneville, Bingham, Bannock, Caribou, and Bear Lake, and in eastern Cassia County near Malta. In round figures there are 300,000 acres of know phosphate-bearing lands in private ownership; 11,500 acres are owned by individual Indians or by the Bannock-Shoshone Tribe; 44,800 acres are in school sections of the State; and all remaining acres, that is, 231,200 acres, approximately, are held by the Federal Government in the western phosphate reserve.
>
> About 50 percent of the acreage held in fee has been developed or partly developed; therefore, it is evident that future expansion of production must come largely from the State or Federal leased lands. In regard to these Federal leases, Congress and the Department of the Interior have recently liberalized Federal leasing regulations in order to encourage further expansion of production, and the number of applications reached a new high in 1948. But the Federal regulations contain no provisions for conservation of lower grade rock or shales except the statement that lessee's "* * * proposed operations of the property will be in accordance with the good conservation practice * * *"; therefore, the interpretation of good conservation practice is left to the discretion of the engineers selected by the Secretary of the Interior. Judging from the history of western metal-mining experience, "a rapid skimming off of the most accessible portion of the deposit may be expected." One can only hope that the administration of the western phosphate reserve will be retained in qualified hands.

That is the end of Mr. Norris' statement.

At the time Mr. Norris' paper was prepared and presented, one of the principal protagonists of this bill before committee had not en-

tered the western field. Since that time, it has acquired 4,420 acres of Federal phosphate lands and 3,040 acres of State phosphate lands; giving it a total leased acreage in that one State of 7,460 acres, and a combined lineal strike of some 133,217 feet or 25.42 miles. It is employing strip-mining methods exclusively in its working of these lands.

It must be kept in mind that, while there is an estimated 300,000 acres of phosphate land in Idaho, only a very limited percentage of this acreage is accessible to plants or rail. The geographic location of the deposit with respect to the main line and spurs of the Union Pacific, the only railroad that serves the Idaho phosphate area, is the principal limiting factor to the economic mining of the rock. With truck transportation over good mountain grades at approximately 6 cents per ton-mile, a deposit must be located within a 30-mile haul to plant or railhead for high-grade rock (30.5 percent P_2O_5 or better) and within fifteen miles for furnace grade rock (24 percent P_2O_5 or better), in order to make the mining of the rock competitive at today's rock values.

Our best estimates indicate that only 20 percent of the Idaho phosphate deposits are within these maximum distances. This, without any other limiting factors, such as broken and faulted structure, high locations above nominal valley floor, et cetera, reduces the available acreage to something like 60,000. If you consider that all the private land is within this maximum distance, then this leaves only 47,500 acres of State and Federal land available for leasing. Using the ratio given in Mr. Norris' paper (44,800 acres of State land to 231,200 acres of Federal land in the western phosphate reserve) this would mean that only 39,805 acres (83.8 percent of 47,500 acres) of satisfactorily located Federal land are available to all interested lessees. Even under the present statutory limit of 5,120 acres, this would mean that less than eight individuals or corporations could control all the desirable acreage. Under this proposed bill, it would mean that four individuals or corporations could control this acreage in its entirety.

As of now, the Federal phosphate lands of Idaho are vested in only a dozen individuals or corporations. This is broken down into State or Indian land in one heading, "Federal" land, and the total.

Monsanto, 3,040 acres of State land, 4,419.62 acres of Federal land, for a total of 7,459.62.

J. R. Simplot, 2,495 in State or Indian land, 2,994.94 in Federal land, for a total of 5,489.

Tarteling, 400 acres of State or Indian land, 3,943.29 acres of Federal land, for a total of 4,343.29.

The rest of these are of lesser proportion. Those are the Big Three.

The totals of State or Indian land are 8,455, the Federal land is 18,248.28, for a total of 26,703.28 acres in the State of Idaho that is under either Federal, State, or Indian Agency lease.

(The full table follows:)

As of now, the Federal phosphate lands of Idaho are vested in only a dozen individuals or corporations. These are as follows:

	State or Indian	Federal	Total
1. Monsanto	3,040	4,419.62	7,459.62
2. Simplot	2,495	2,994.94	5,489.94
3. Terteling	400	3,943.29	4,343.29
4. Western Fertilizer Co.		1,522.24	1,522.24
5. Westvaco	2,440	80.00	2,520.00
6. Anaconda Co.		1,155.56	1,155.56
7. Grant Murdock [1]		640.00	640.00
8. Fredrick P. Champ [1]		120.31	120.31
9. Henry L. Finch [1]		120.00	120.00
10. Potash Company of America [2]		800.00	800.00
11. Huskey Oil Co. [2]		1,934.20	1,934.20
12. San Francisco Chemical Co. [2]	80	518.12	598.12
Total	8,455	18,248.28	26,703.28

[1] Individuals.
[2] Acquired entire acreage in 1956.

It will be noted on this particular table that there are three individuals involved. I notice Mr. Soule's report does not include Henry L. Finch. In all other aspects, we check the research done in the office here, identically except this list is up to date. The Potash Company of America, the Huskey Oil Co., and San Francisco Chemical Co. have acquired Federal lands since the first of the year or since the January 25 issuance of the report as submitted by Mr. Soule's office.

Mr. ROGERS. Let me interrupt at that particular point. Do you have any information or figures concerning the amount of acreage that is owned in fee by any of these people?

Mr. KING. We did not bother to run that up except, Mr. Chairman, the expression in Mr. Norris' statement, in which he says—and I have no reason to believe that these figures are anything but accurate because Mr. Norris is a very painstaking individual—he said that 12,500 acres are in private ownership.

Mr. ROGERS. That is including all the fee owned?

Mr. KING. That is including all the fee lands. The withdrawal act effective 1908 and the statute of 1921 would make that figure still valid today. So 12,500 is the fee land held outside of the domain.

We point out all the above to emphasize the fact that the available phosphate lands held in the public domain are far from being unlimited, as is sometimes assumed. Actually, the best properties are already taken up, with those remaining being of secondary desirability.

Would the passage of this bill promote the exploration and development of additional tonnages of phosphate rock? On the contrary, we share the fear expressed by Mr. Norris that a "rapid skimming off of the most accessible portion of the deposits" will continue.

When we speak of "the most accessible portion of the deposits" we have in mind the physical portion, more than the geographic portion. In order to illustrate what is meant by "skimming off" a phosphate deposit, we have prepared and here present four ideal block diagrams; showing characteristic dip slopes in varying attitudes, respecting angle of dip, and showing typical strip-mining practices. The threat of "skimming off" applies only to the material won by stripping or "open cast" methods. The reason for this is twofold: (1) In a stripping operation the operator starts right at the grass roots, usually without any predevelopment expense, except the pioneering of a roadway to the outcrop enabling him to get his stripping machinery to the starting point, and (2) with an underground mining program the absolute opposite is true, the operator must set up his surface plant, that is, compressors, patio preparation, bins, and trackage, then proceed to drive his entry to the bed intersection. With surface mining the very cheapest rock, irrespective of the degree of dip, is won at the very inception of the work, with the more expensive to marginal rock presenting itself at the profit vanishing point down dip. Again, in the underground method, the reverse is true; the highest cost rock being the initial rock won in development mining, with the lowest cost rock being during the final stages of the recovery operation. Our concern, then, rests with the recovery by strip mining.

With your permission, I will show you these block diagrams in larger scale as they do not show up properly in miniature. This is case 1 and shows a physical situation quite common in the field. This can either be the flank of an anticline or a gentle synclinal flank. The characteristic common in all four cases, that of the hill slope being gentler than the dip of the beds—in other words, this hill slope being gentler than the dip of the beds—causing an increase in burden removal requirement the farther down-dip the operation progresses. With the spoil pile resting laterally with the final excavation, this serves to indicate that the operation has reached its maximum stripping depth. And I mean by its maximum stripping depth, its arbitrary maximum, the economic cutoff point that the operator has conserved. In this ideal sketch approximately 400 feet of dip-slope material is being recovered.

Case 2 shows a formation dipping at 45°. The reason we have taken 45° and 70° and shown them in different land form is because these dip slopes will find themselves in any attitude from horizontal to vertical or overturn.

This shows, again, an anticlinal or synclinal dip-slope. In this ideal sketch we intend to portray a most common field condition, and to show various degrees of down-dip advance, say 150, 300, 400, 500 feet. The cheapest rock has already been extracted from the back-uppermost panel. The economic mining, stripping, depth is represented in the front-lowermost panel.

Case 3 is a yet steeper dip. These are formations dipping at 70 degrees.

This type of "strike stripping" produces the lowest economic tonnages of the four cases we present. The structure is typical and the temptation of short down-dip recoveries is the strongest in this case. It becomes immediately evident that this is not a good stripping situation, but if such steep dips are encountered in part of a leased acreage,

and the operator is set up only for strip mining, they have been, and probably will continue to be, the subject of shallow depth stripping.

CASE 4—TERRACE OF TROUGH DEPOSIT

By this ideal sketch we have intended to show an erosional remnant of the trough of a syncline. By inverting the trough structure diagram could then be the erosional remnant of the crest of an anticline. Both physiographic forms are found in the field. With this type of land form we present the most favorable stripping situation. Spoil areas are available immediately outboard of the outcrop which produces very low center of mass hauling. The sketch actually portrays, in a general way, the situation that exists at our Wyoming strip mining operation, except our objective is the upper group of beds in the phosphatic section, rather than the lower beds as shown.

In order to keep this consistent with the other exhibits we have shown that as recovery of footwall beds or Z beds of firm shales. The same system would apply in either case.

If unlimited stripping length were available to the operator, he would be tempted to proceed in this fashion. In other words, he would hold his stripping ratios down to the very minimum in order to produce the lowest cost of his rock, thereby leaving behind considerable tonnages of equitably priced or cost rock.

Mr. ASPINALL. Mr. Chairman, may I ask a question there?

Mr. ROGERS. The gentleman from Colorado.

Mr. ASPINALL. You state that he would be tempted. Can you tell us whether or not this has been done?

Mr. KING. Well, sir, Mr. Aspinall, I am not in a position to say whether or not it has been done. I would like to point out that the large furnace operators, for example, including the big people, the big three that are involved in this discussion, have only been actively engaged in the mining of phosphate rock a matter of a few years. They have presently an entirely virgin situation with respect to the conception of mining and the carrying on of the program. Whether or not as they progress and strip back some of these areas, the temptation will be too great to follow a practice that this would suggest, I could not say.

Mr. ASPINALL. What if the Congress should happen to place a provision in the law that, once having started in an area, there would not be any surrendering of that area until the whole operation had been evaluated and it could be found out whether or not the whole operation from the most valuable ore down to the place wherever it becomes possible to say that further operations would spoil the economic feasibility of everything that has been done in that area, what would be the objection to the sort of approach?

Mr. KING. Mr. Aspinall, the objection we have to this bit of legislation is that there is no such conservation measure set out in the bill. In other words, there are no provisions made except to carry forward the provisions that exist under the Leasing Act of 1921, of which the Public Law of 1948 simply increased the acreage. There is no language in the act that gives—Mr. Norris covered that in his statement.

Mr. ASPINALL. Thank you.

Mr. BUDGE. Mr. Chairman, could I ask a question here?

Mr. ROGERS. Mr. Budge.

Mr. BUDGE. In line with the inquiry by the gentleman from Colorado, in quoting from Mr. Norris' paper, you read this sentence:

One can only hope that the administration of the western phosphate reserve will be retained in qualified hands.

To whom did Mr. Norris refer as to qualified hands? Where else would you put it than where it is right now?

Mr. KING. Mr. Budge, if you will go back a little ahead of that in the statement of Mr. Norris, he makes the statement:

The interpretation of good conservation practice is left to the discretion of the engineers selected by the Secretary of the Interior.

Mr. BUDGE. It is in the Department of the Interior.

Mr. KING. That is correct.

Mr. BUDGE. Where else would you put the conservation practices?

Mr. KING. We do not suggest it is put any place except we suggest the bill as it stands does not involve any or sufficient protection with respect to good conservation practices.

The only statement that was made is—

Proposed operations of the property will be in accordance with the good conservation practice.

Mr. BUDGE. Should Congress go further and spell out what conservation practice the Secretary should follow? Or should we change it and remove this from the Secretary to someone else to get it into qualified hands?

Mr. KING. I do not think the aspersion is made here that the hands are qualified, Mr. Budge. The point is, and the point that Mr. Norris made in 1948, was that this industry was in its infancy with respect to large production, and that it was hoped that with this liberalization of the leasing acreage, that accompanying it would be an administration of conservation which would be impeccable, if you will, so that there would never be any question.

We contend this: That if we are going to double the acreage allowable within the State of Idaho—and, of course, our story is essentially the State of Idaho because it is the State that is really involved in this particular action—if the legislation is going to allow for doubling the acreage in that State, we believe that suitable language should accompany the bill at least that would spell out the right conservation practices.

Mr. BUDGE. Somewhat in line with the suggestion made by the gentleman from Colorado?

Mr. KING. That is actually what is in the back of our mind in this bill as a requirement.

Mr. BUDGE. You do not question the Secretary of the Interior being qualified to administer it?

Mr. KING. Not at all. It is the agency that should.

Mr. BUDGE. Thank you.

(Discussion off the record.)

Mr. KING. It must be kept in mind that surface mining, beginning as it does "at the grass roots," and without expensive or elaborate preparation, the operator has a free choice as to how far down dip he will follow the ore. Since the lowest cost rock is found at zero cover, and, under the commonly found structural and physiographi situations increases for every foot down dip from that zero cover, it be-

comes immediately apparent that he can elect, if he chooses, to "skim off the cheap material"——

Mr. BUDGE. Now that is in line with the regulations which you quote from Mr. Norris' paper, that the operations of the property will be in accordance with the good practice as outlined by the Secretary of the Interior.

Mr. KING. Mr. Norris and the company I represent feel that is entirely too mild a statement—in line with good conservation practices—without any interpretation of what is good conservation practices.

Mr. BUDGE. Would you object to legislation if the conservation practices were spelled out in it?

Mr. KING. If it were necessary to proceed with the legislation. And I hope we will be able to prove it is not presently necessary. Certainly as the bill presently stands, that is our principal objection.

Mr. BUDGE. Thank you. Mr. Chairman.

Mr. ROGERS. You may proceed.

Mr. KING. It becomes immediately apparent that he can elect to skim off the cheap material—we are not making any claims it has been done—and his temptation to practice this "high grading" will be only controlled by the total amount of strike length he holds under lease. Other things being equal we would suggest that this would be twice the temptation if he is now given twice the permissible acreage that this bill intends. Such a course may be an entirely logical one to an operator of a rock processing plant seeking to maintain the lowest possible production costs, but it is not in accord with good conservation practices or the public interest.

Mr. BUDGE. There we are now talking about good conservation practice again.

Mr. KING. That is right.

Mr. BUDGE. And if you are going to follow good conservation practice, you are not going to permit that which you are talking about. Is not that true?

Mr. KING. That could be inferred to be true.

Mr. BUDGE. And that is the regulation in the Department today; is it not?

Mr. KING. Of course, the exception we take with the regulation is that it is not firm enough.

Mr. BUDGE. No legislation and no regulation is permanent.

Mr. KING. I did not say "permanent"; I said "firm enough."

Mr. BUDGE. Pardon me.

Mr. ROGERS. Go ahead.

Mr. KING. It also constitutes a form of unfair competition with any operator that employs proper conservation practices.

The second argument, namely, that additional reserves are needed by the operators of phosphate rock processing plants than those which can be acquired under the present Federal leasing act is equally fallacious. We propose to show that 5,120 acres of Idaho phosphate land can support the largest plant in Idaho for several hundred years, if full advantage is taken of the deposits under control.

This morning we heard two figures given to us. One was 50 years' reserves. The Westvaco people felt they were justified in going ahead with 20 years of reserves. We will carry this into engineering fact.

It is estimated by the United States Department of the Interior in Mineral Industry Surveys MMS No. 2492×2, which is for the first 6 months of 1955, and we took the liberty of doubling that simply because it was the latest release of statistics—that approximately 1,904,000 short tons of all grades of rock and furnace shales were produced and sold in the western phosphate field during 1955. The western plant using the greatest tonnage of this material was the Westvaco electric furnace plant at Pocatello, Idaho, estimated 800,000 short tons. Their representative said this morning 700,000 short tons, which would make our figure a bit high. This is a 4-furnace plant; the other 2 furnace installations, (1) Monsanto at Soda Springs, Idaho, and (2) Victor at Silver Bow, Mont., are both 2-furnace operations.

Our most careful reesarch into Federal leasing units indicates that they contain approximately 18 lineal feet of strike length per acre of lease. In other words, the average width of a lease parcel is 2,800 feet. The following table gives data based on 18 feet of outcrop length per acre and a 26-foot thickness of ore (this is a minimum recoverable thickness of the "furnace shales" and the "Z" bed, or footwall bed—the average thickness being closer to 30 feet, as recovered, combined). Twelve cubic feet of rock in place equals 1 short ton of 2,000 pounds, dry basis.

Now for down-dip mining in feet, starting out with the outcrop, proceeding down the dip, 50 feet from the outcrop down dip would produce 1,950 tons per acre; 100 feet would produce 3,900 tons per acres; 200 feet would produce 7,800 tons per acre; 400 feet, 15,600 tons per acre; 600 feet, 23,400 tons per acre; 1,000 feet, 39,000 tons per acre.

Now the tons available, using the same criteria, in 5,120 acres of Idaho phosphate land, in millions of tons: for 50 feet, 10 million tons; 100 feet, 20 million tons; 200 feet, 40 million tons; 400 feet, 80 million tons; 600 feet 120 million tons; 1,000 feet, 200 million tons.

Using our Waterloo operation as atypical down-dip extraction program, Montpelier, Idaho, fee, land, it will be noted that we have actually stripped down-dip some 1,500 feet below the outcrop. Even using the minimum in the table above, 50 feet down dip, a single operator controlling 5,120 acres of Federal leased land, not including such private or State land that he might control, could supply the entire Western output for over 5 years, based on last year's estimated used tonnages. Assuming 200 feet of down-dip recovery, a consumer requiring 500,000 tons per year, probably the equivalent of the 2-furnace plant requirement, we understand that it is, he would have enough for 80 years. That is just down the dip 200 feet. If he made full use of his available strike length, and that is 17.5 miles, 18 feet per acre related to 5,120 acres is 17.5 miles of strike length, by mining to a depth of 1,000 feet down dip, 66 percent as far as we have carried stripping on our own fee land, he would have enough furnace feed to last his operations 400 years, or if he doubled them, for 200 years.

With 50 years of Western phosphate mining behind us, we are the first to admit that all land is not productive. We have long been students of the structure of the phosphoria formation, and realize probably better than anyone else, that local and regional faulting and folding has resulted in the producing of "barren" areas. Also, the erosional action on the dip-slopes that have largely stood since the Laramide revolution (the epic that resulted in the formation of the

Rocky Mountains, as we know them today), has taken the phosphate away in certain canyon disections. Therefore, we freely admit that the actual occurrences of the rock are not as favorable as the ideal diagrams accompanying this statement would seem to indicate. These negative conditions will tend to reduce the figures in the above table. However, as we understand the existing leasing regulations, there is nothing to prevent any lessee from fully developing his leaseholdings, carefully mapping and evaluating them, and then, if he so chooses, turning the barren acreage back into the public domain; thereby giving him the "freeboard" to apply for additional acreage, to bring his total leaseholdings back to the statutory maximum of 5,120 acres within any one State.

I might point out that that figure has not been acquired by any person interested in Western phosphate mining to this day.

Mr. ROGERS. If you will permit me to interrupt at that point. There is not anything requiring him to fully develop his acreage, is there, or turn it back?

Mr. KING. No, sir, that is true. But if he so wishes he can develop his acreage, and those barren areas which he is not content with he can turn back to the Government, and that will give him additional acreage to pick up someplace else if he so desires.

Mr. UTT. May I ask a question at that point?

Mr. ROGERS. Mr. Utt.

Mr. UTT. Can he give back the land in less than 40-acre blocks? Can he give remnants back?

Mr. KING. You mean, can he give back in less than the parcels he has leased from the Government?

Mr. UTT. Yes.

Mr. KING. I do not think there is any regulation that covers that, Mr. Utt. I would presume he could.

Mr. UTT. I believe we had testimony when we heard the bill the first time that there was a regulation they had to deed back in parcels as they had taken.

Mr. KING. I would assume that could possibly be the relationship between the lessee and the Bureau of Land Management. I do not know that it is strictly covered in the administrative wordage of the law. That is one point I have not touched on.

Mr. UTT. In such a case, if there was 1 acre out of the 40 not good, he would not want to release the 40 in order to have another 40.

Mr. KING. That is conceivable unless he had a better 40-acre tract to get. It is a matter of trading.

Mr. ASPINALL. While we are on that question, can he release any 40-acre unit as soon as he has taken the ore out of it?

Mr. KING. I was just going to cover that, Mr. Aspinall.

Mr. ASPINALL. All right.

Mr. KING. It must also be kept in mind that he has the right to turn back such acreage as he feels he has depleted by mining. Of course, such a release might under certain circumstances, tip his hand as to his conservation practices, but the release of such worked-out acreage, will again give him additional freeboard to acquire the equivalent acreage up to the maximum statutory limits. These two prerogatives of lessee, if practiced, will return all the above facts and figures into true focus.

CONCLUSION

The proposed legislation would appear to serve no legitimate end. It is not needed to provide adequate reserves and it will not encourage the mining of additional quantities of phosphate rock. On the contrary, it will encourage exploitation of the public domain in a manner not in conformity with good conservation practices.

A negative report on H. R. 8394 is respectfully requested.

Mr. ROGER. Thank you, Mr. King, for an excellent statement.

The Chair now recognizes the gentleman from Colorado, Mr. Aspinall.

Mr. ASPINALL. I have but 1 question at this time, and that is relative to the statement made at the top of page 16 that the lessee can turn back such acreage as he feels he has depleted by mining. Must not that returning be made in accordance with whatever the Secretary of the Interior might set up as good conservation practices in the taking of the ore from the land?

Mr. KING. I do not think so, sir. I think it would be his free choice under the present statute. In other words, if he has proceeded with his mining as far as he reasonably feels he wants to, or even if he has not mined the property at all, if he has some completely virgin property and decides he does not like it, there is nothing to prevent him turning it back to the public domain.

Mr. ASPINALL. He says, "I do not like it and am not going to pay the lease fee on it"?

Mr. KING. That is correct. He does not have to hold it. The fact he leased it does not mean he must maintain it. That goes for any stage of mining or depletion.

Mr. ASPINALL. That is all.

Mr. ROGERS. Mr. Budge.

Mr. BUDGE. I note here in your statement, Mr. King, you list yourself as president of the San Francisco Chemical Co., Montpelier, Idaho. Is that an Idaho corporation?

Mr. KING. No, sir; we are a California corporation. We have done business in the State of Idaho since 1906.

Mr. BUDGE. What is the nature of the operation at Montpelier?

Mr. KING. Our company is strictly miners and marketeers of rock. We are the only custom producers of phosphate rock in the Western United States. We are completely noncaptive. We provide rock for sale to the general trade.

Mr. BUDGE. You do not do any processing yourselves?

Mr. KING. No, sir; strictly mining.

Mr. BUDGE. Do you have any connection with the Stauffer Co.?

Mr. KING. Yes, sir. They are our very best customer and landlord at our Idaho operation.

Mr. BUDGE. Do you have any mingling of stock between the two corporations?

Mr. KING. There is a mingling of stock. That is a development of very recent origin with the last 2 months, month and a half. Prior to that there was no connection whatsoever.

Mr. BUDGE. I do not want to delve into your business.

Mr. KING. It is perfectly all right.

Mr. BUDGE. What is the nature of the stock situation between the two corporations now?

Mr. KING. Presently Stauffer is 50 percent owner of the San Francisco Chemical Co.

Mr. BUDGE. Is Stauffer then a processor? I am not familiar with it.

Mr. KING. Yes, Stauffer manufactures single superphosphate in 3 plants on the Pacific coast, 1 at Tacoma, Wash., 1 at Stege, Calif., and 1 at Vernon, Calif.

Mr. BUDGE. And that corporation now owns 50 percent of the San Franciso Chemical Co.?

Mr. KING. That is very modern history. That is correct.

Mr. BUDGE. Does your company operate any place else in the world other than the United States?

Mr. KING. No, sir; we are strictly an American entity that operates only in the three States that I mentioned.

We presently produce 100 percent of the rock that is produced in Utah, 100 percent of the rock that is produced in Wyoming, and we are fair producers in the State of Idaho. But of the 4 States, we are operating in 3. That is the sum total of our operations, Mr. Budge.

Mr. BUDGE. Is Stauffer also a domestic corporation?

Mr. KING. Yes.

Mr. BUDGE. Do either one of you have any interest outside of the United States?

Mr. KING. No, sir, we have not. I cannot speak for Stauffer. I can simply speak for the San Francisco Chemical Co. I am sorry.

Mr. BUDGE. You are a United States corporation?

Mr. KING. That is correct, sir. We have our own board of directors and our own management.

Mr. BUDGE. Do you have any financing from outside the United States?

Mr. KING. No, sir.

Mr. BUDGE. I note you said that you produced 100 percent of the rock mined in Wyoming. Is that on the public domain?

Mr. KING. No, sir, it is all fee land.

Mr. BUDGE. Owned by your corporation?

Mr. KING. Yes, sir. It is owned by the Stauffer Chemical Co. They are our landlords at our lease operation in Wyoming, which is just out of Sage.

Mr. BUDGE. They own the land and you mine it?

Mr. KING. We operate it on a royalty basis; that is correct. It is fee land that has been held since before the withdrawal in 1908.

Mr. BUDGE. How many acres would you have or would Stauffer have or both of you together have in Wyoming?

Mr. KING. I am sorry I cannot answer that too well. About 164 acres of fee land in the State of Wyoming. In addition to that, Stauffer has a Federal lease. I do not believe the figure is here. No, this is the Idaho story. I am sorry I do not happen to have that information with me.

Mr. BUDGE. Would you furnish for the record a tabulation of the total acreage owned by yourself and by Stauffer in fee?

Mr. KING. I can approximate it only, Mr. Budge. We have 505 acres in Idaho held in fee, San Francisco Chemical Co. Stauffer Chemical Co. in Idaho has about 240 acres in fee. That is the size of their holdings in Idaho.

In Wyoming they have this 165 acres at Leefe, and a Government lease amounting to—I have forgotten the acreage, but you can get it from Mr. Weiss when he is on tomorrow.

Mr. BUDGE. I do not believe it is necessary right now. I was going to ask, with the permission of the chairman, that you furnish a statement for the record of the properties under the control of your corporation and Stauffer in the States in which you operate, and break them down as to whether they are fee lands, lease lands from individuals or Indian tribes, or lease lands of any nature, plus the Federal lease land which you have.

Mr. KING. I can give you the San Francisco Chemical Co. now, Mr. Budge. We have 1,555 acres of fee lands. That is in lode claims. We have 228 acres in placer claims. We have 679 acres of State lease. We have 537 acres of United States Government leases. For a combined total of 2,999 acres.

Mr. BUDGE. That is in all of the States in which you operate?

Mr. KING. That is in all of the Western States. Our entire land holdings that we control is slightly less than 3,000 acres, including over half—including two-thirds of that which is in fee simple.

Mr. BUDGE. Do you do any strip mining?

Mr. KING. Yes, sir. We were the originators of the present practices in the West. We started in 1945 with strip mining on an experimental basis, and we were highly successful, and have been copied throughout the area in other operations like Simplot and Monsanto. I guess those are the two notable ones, and Anaconda.

Mr. BUDGE. In your strip-mining operation, did you mine, if necessary, to skim the cream, as you talked about a few minutes ago?

Mr. KING. So far as the material I have given you, this is actually a boundary map of the Waterloo operation which we are presently working and have worked. We have owned this property in fee since 1906. This represents a stripping length down dip. The outcrop being here [indicating]. And that is 1,500 feet down dip. We have now come to a place along the protore line, in which the depth of burden is too great to allow us even to trade dollars. So we have reached the economic vanishing point with respect to the cost in the Waterloo operation. Does that answer your question?

Mr. BUDGE. Do you consider that a good conservation practice?

Mr. KING. It is the best; when you start losing money you have got to quit.

Mr. BUDGE. That is what I was wondering about this good conservation practice you wanted to spell out. I do not know just what that would be.

Mr. KING. That is a tough assignment to work out the language of that, but I certainly think it can be done if it needs to be done, but we hold it does not need to be done at all, Mr. Budge, certainly, with 400 years of reserves estimated at a thousand feet of stripping, if they practice that method for the largest plants in the State of Idaho.

Mr. BUDGE. Of course, that is assuming that the plant remains static.

Mr. KING. Even if they double, it is 200 years, Mr. Budge.

Mr. BUDGE. The people of Idaho are always looking for development of our resources, that is, with good conservation practices.

Mr. KING. Right.

Mr. BUDGE. So far as I know, there may be a demand for 10 times as much production as there now is.

Mr. KING. We certainly hope so. We have a great deal of faith in the western phosphate industry, Mr. Budge.

Mr. BUDGE. If that were true, you would need 40 furnaces. So what you have said would not necessarily apply.

Mr. KING. Would you suggest that one company have 40 furnaces?

Mr. BUDGE. That would not put them up in the United States Steel class by quite a bit.

Mr. KING. Pretty close.

Mr. BUDGE. I certainly do not want anyone to have a monopoly. The thing that I do not quite understand from your opposition is why all of the objections which you raise would not occur, and probably in greater fashion, if you require a company to go across a State line to locate another bed of ore in order to keep his present operation or expanded operation going.

Mr. KING. Don't you believe that if you have a multimillion-dollar facility in the State of Idaho, as an example, and have reserves that will by fact and figure and experience show 400 years of tenure, do you not think that is sufficient justification to break that down 4 times, if you wish, and still have 50 years of reserves, or 8 times and still have 25 years of reserves for a multiple operation? I mean, even with your greatest hope for the expansion of the State of Idaho, it allows quite a little freeboard.

Mr. BUDGE. I do not understand how you get better conservation practices, or the other objections which you have raised, I do not understand why they are not just as valid if you require a plant in Idaho, say, to go over into Utah or into Wyoming and mine the ore and ship it back to the plant. How do you remove any of the objections you have made at that point?

Mr. KING. I can tell you at the present economic standards it would not be possible to mine the ore in a neighboring State and ship it into Idaho for processing, because the value of the material for the next hundred years will not be sufficient to allow it.

Mr. BUDGE. In other words, you would not let them build the additional furnaces in Idaho, you would force them to go across the State line and build them some place else?

Mr. KING. I do not believe so, because Idaho contains as much phosphate rock as all the rest of the western United States put together, and under a system of fair exchange of property it will not be necessary for anyone to go outside of the State of Idaho for at least a century competitively.

Mr. BUDGE. Perhaps not, if they do not get larger than the four-furnace class. I do not know. We are going to have to go into it a little further with some of the additional witnesses.

But your operation primarily is deep mining, is it not?

Mr. KING. Not necessarily, no, sir. We are producing more rock from surface methods than we are by underground. We are producing both ways.

Mr. BUDGE. I think that is all, Mr. Chairman.

Mr. ROGERS. Mr. Edmondson.

Mr. EDMONDSON. No questions.

Mr. ROGERS. Mr. Utt.

Mr. UTT. No questions.

Mr. ROGERS. Mr. King, I have a few questions.

In the first instance, there is one question that has been causing me a little bit of trouble. You may not know the answer to it. But these operations that have been started out there in the production of phosphate, have most of those been started with private funds? I mean corporations using their own funds to develop?

Mr. KING. In every case except one that I know of, Mr. Chairman.

Mr. ROGERS. What funds were used in that other case?

Mr. KING. I have forgotten what they called the agency. It was not Metals Reserve. It was the equivalent of it. WPB work.

Mr. ROGERS. Government money?

Mr. KING. That is correct, in one case only. The rest have all been private.

Mr. ROGERS. Was that particular case successful? Are those people still operating?

Mr. KING. Yes, sir, they are still operating.

Mr. ROGERS. The reason I was asking that question is that it has been my experience that potential recovery is not so important when Government money is being used sometimes as it is when a man's own money is being used. I was just wondering if the RFC or the Small Business Administration or somebody had financed some of these operations.

Mr. KING. Actually, this one I speak of, Mr. Rogers, was an RFC plant and later converted to private ownership under the same aegis of management.

Mr. ROGERS. If you know, and you may not know, were any of those operations started on the basis of some Government contracts on a cost-plus basis?

Mr. KING. No, sir. The only Government business that has entered into the phosphate field in the West, with the exception of this one plant that I mentioned, is that after World War II General MacArthur involved the phosphate industry into the rebuilding of Japan and Korea. During that time, through the Quartermaster Corps, we were asked to make offerings for shipment of tonnages of phosphate rock from the western field to Japan and Korea. Our own company participated in some 650,000 tons of that business.

I might add that the price of that rock was identical, and the grade was identical with the rest of our commercial business. Also some of the other companies out there participated in the same business, but that was a reconstruction business after World War II and was done on competitive bidding. It was strictly QMC purchase.

Mr. ROGERS. Another thing about the history of this situation. Were most of the operations out there started prior to the amendment of the act by the 80th Congress?

Mr. KING. By what, sir?

Mr. ROGERS. Let me rephrase the question. Were most of the operations out there started at the time when the limitation was 2,560 acres, I believe?

Mr. KING. I might clarify a bit of that history for you, if you care to.

The hearing on that particular bit of legislation was held in Pocatello, Idaho, in 1948. The protagonists of this legislation, one of them at least, was not at that time in business out there. The testimony that you heard this morning concerning Westvaco was a large contrib-

uting argument in 1948 for the increase from 2,560 to 5,120, and that was made a part of the argument for increasing or relaxing the statutes at that time.

Since then there have been two furnace plants go into operation. Of course, they are the large ones. The western phosphate industry has expanded 610 percent in the last 10 years, and most of that expansion has been via the electric furnace route. There have been 2 other plants besides the 1 I speak of that have come in after the legislation of 1948.

Mr. ROGERS. What I am getting at is this: Was the change in the law in the 80th Congress responsible or accountable for the building of additional facilities?

Mr. KING. No, sir; I do not believe so. I cannot believe so. Of course, it is hard to say "No" to a question like that in a qualified way.

Mr. ROGERS. Mr. King, if this bill were enacted, do you feel there would be an expansion of the industry?

Mr. KING. No, sir; I do not. If there were any suggestion that such a thing would be true, I believe you would find that these people would be up to their limits at the moment instead of short of them.

Mr. ROGERS. How many acres does your company have in the western area under lease, Federal lands?

Mr. KING. We acquired a lease of 518 acres of Dry Ridge property in April of this year. That is the only Government land we have under lease. I might add, it is 35 miles from a railhead, is strictly an underground operation, and strictly for the future. It is simply in the form of a reserve.

Mr. ROGERS. If this bill should be passed, then you would actually stand to benefit by it, would you not, insofar as enlargement of your present rights? Although you have not exercised them, there would be an enlargement of your present rights to move in and get some more acreage?

Mr. KING. On the philospohy it would relax the acreage limitation. Actually there would be no advantage to our company at all if the bill were passed. It would actually affect our operation in that we are competitive in the field. Any member of any industry is a competitor in one way or another.

Mr. ROGERS. Let's go back just a little bit on that. I believe you said your present reserves are some 2,200 acres?

Mr. KING. 2,995, including all types of land.

Mr. ROGERS. All types of land. Now Mr. King how long do you think that will keep your company in operation?

Mr. KING. We have our reserves projected only for 10 years.

Mr. ROGERS. Only for 10 years?

Mr. KING. Yes, sir.

Mr. ROGERS. And that is only 2,995 acres?

Mr. KING. Yes. And the reason we project for that period is because we are content only with ore that is blocked out or reasonably blocked out.

Mr. ROGERS. Do you mean by that that your present projection for 10 years is a complete projection of your reserves or a complete estimation of your reserves? In other words, what you have in this particular 2,995 acres?

Mr. KING. Of our fee land only, Mr. Chairman. Our Government land has not come into our estimates yet. We heven't developed it.

In other words, we have simply bid on it and have been awarded 518 acres, and we cannot establish our reserve status on that until we do some work on outcrops and engineering work and so forth. So that is not included in that package. The rest of the work is pretty well developed. Of course, we have been mining for a good many years, and we still hold the fee land which is presently exhausted, like at Waterloo. Only a couple hundred thousand tons remain in that entire block. Those lands belong to us and, consequently, we will have to keep them and graze on them or something.

Mr. ROGERS. Then, accordingly you are going to need some more acres in the future?

Mr. KING. That would be a safe assumption.

Mr. ROGERS. I mean in the near future, relatively speaking.

Mr. KING. That is correct sir.

Mr. ROGERS. You still have in your own right under present law some 4,500 acres of Federal land?

Mr. KING. That is correct. We certainly feel that is plenty or we would not be trying to object to this bit of legislation.

Mr. ROGERS. Mr. King, in your objection or protest to this legislation, what is your major purpose in protesting it? What do you feel will be brought about if it is passed?

Mr. KING. We feel that the lands that are presently held under lease are not properly explored. In other words, we feel that none of the western leases—of course, some of them have not had time yet to be developed fully and explored properly. But we feel that there is entirely too much P_2O_5 phosphate ore available to an individual or corporation under today's statutory limitation than could be conceivably used over the next century. We disbelieve in doubling that because of the temptation any company would have, if they had unlimited lineal miles of outcrop, of only taking the very lowest strip of material or high grading, if you will, on which rock the cost of which we must compete against in our integrated operation. We feel it is a bit of unfair competition unless we are to adopt the same operation. Of course, we have the same right.

Mr. ROGERS. Let me ask you this, Mr. King, in that respect: Is there any fear on the part of yourself or the other people with whom you are associated of a possibility of blocking up of acreage around the transportation facilities?

Mr. KING. Might I go back to my statement, Mr. Chairman?

Mr. ROGERS. That is what I had in mind when I asked the question.

Mr. KING. In which I say this:

We point out all the above to emphasize the fact that the available phosphate lands held in the public domain are far from being unlimited, as is sometimes, assumed. Actually, the best properties are already taken up, with those remaining being of secondary desirability.

Does that answer the question?

Mr. ROGERS. That is generally. The query I had in mind is this: I believe you said, and I believe several of the other witnesses said, that the question of transportation is a substantial factor insofar as the economic feasibility of producing phosphate is concerned.

Mr. KING. Very vital.

Mr. ROGERS. Now, your transportation facilities in that particular section of this country are rather limited?

Mr. KING. That is correct.

Mr. ROGERS. Now, the present production facilities or the potential production of phosphate that is located near a railroad is, of course, the most desirable?

Mr. KING. Right.

Mr. ROGERS. And it is that acreage that you claim in your statement is more or less limited, which, of course means that even though there is a tremendous amount of this phosphate available, it is not economically feasible to produce because of its location.

Mr. KING. May I say, again: With truck transportation over good mountain grades at approximately 6 cents per ton-mile, a deposit must be located within a 30-mile haul to plant or railhead for high-grade rock and within 15 miles for furnace-grade rock in order to make the mining of the rock competitive at today's rock values. Our best estimates indicate that only 20 percent of the Idaho phosphate deposits are within these maximum distances.

And those have been taken up and improved at that, Mr. Chairman.

This lease offering we were successful with last month for 518 acres of Dry Ridge deposit is 35 miles from existing railhead, and also it is not a structure that will lend itself to economic stripping for any reasonable tonnage. We intend: (1) that it be an underground mine; and (2) that it is so far from the railroad that within any reasonable time it will not be put actually into full production.

Mr. ROGERS. How long does it take to set up the facility to handle phosphate?

Mr. KING. On strip mining it takes about 2 days.

Mr. ROGERS. I mean a furnace. How long does it take?

Mr. KING. Of course, that is a major undertaking. It takes all the way from 9 to 14 months to construct a furnace plant.

Mr. ROGERS. Do you anticipate a sharp upward trend of the market?

Mr. KING. Presently the market is off considerably in our particular business, which is the agricultural side of the phosphate business, because of the present small farm recession that we are enjoying. As far as the elemental phosphorus production is concerned, it appears to be comfortably up to requirements. There are presently no other actual cases of plants on the drawing boards today that we know anything about, at least with any reasonable factual background.

Mr. ROGERS. You feel that unless there is an arresting of the downward trend of farm income or a leveling off of that, that you can expect a continued decline in the phosphate market?

Mr. KING. That would follow, yes. Of course, looking only at the agricultural side of this thing, the first thing the farmer quit doing is fertilizing his fields, peculiarly.

Mr. ROGERS. Sometimes, you know, if the prices get low enough, he has to pour on a lot more fertilizer in order to make ends meet.

Mr. KING. That is a happy situation as far as we are concerned.

Mr. ROGERS. With all the farm surpluses at the same time, we do not want to get this thing all mixed up.

Counsel has handed me a question with regard to the feasibility of constructing spur lines to the present existing railroad facilities. Would that be economical?

Mr. KING. It is the old story of moving the mountain to Mohammed or moving Mohammed to the mountain. The cost of spurline construction today—you can get various prices for doing the job. It runs in our country approximately a million dollars for 10 miles. Any

person having a large enough deposit of rock and sufficient courage can build a rail spur, for instance, into Dry Ridge, the one we just picked up, 35 miles from the railroad, for about $3 million, which does not sound like a great deal of money, but it is a great deal of money when you try to amortize it against a $5.50 mined grade material. The price of phosphate rock has not materially changed since 1906.

Mr. ROGERS. You said $3 million?

Mr. KING. $3 million.

Mr. ROGERS. That sounds like a lot of money to me. I was just wondering if maybe we would not have to reestablish the RFC to create the source necessary for the finances to make the investment?

Mr. KING. From the private standpoint, from a person strictly on the mining side as we are, it is quite a task building a railroad of that distance. However, it is cheaper to build it for $3 million against 30 million tons of recoverable ore than it would be to truck that rock at 6 cents a ton-mile over the distances involved in that particular case. For the long pull it would be the sensible approach, a matter of courage and feeling as to what the market situation is going to be. We are strictly in the custom side of this. We have no captive requirements at all.

Mr. ROGERS. I believe that is all I have at present. Does anyone else have more questions?

Mr. BUDGE. You were talking about the fact that you projected your reserves for 10 years. I can see how that would be, perhaps, adequate planning for a mining corporation, but do you think that would be anywhere near adequate for a processing operation?

Mr. KING. No, sir; I would be very content to stand on the terms we heard this morning of from 20 to 50 years. I would suggest that, if you have a multimillion dollar expenditure like exists, for example, at Pocatello, where you have some 12 or 15 million dollars involved in plant facilities, that you should comfortably have 20 to 30 years of reserves in order to properly amortize it according to good business practices.

Mr. BUDGE. Then, if you intended to expand that operation, it would be necessary to increase the reserves; would it not?

Mr. KING. In this particular operation that I speak of, the people that are running the plant are not mining their rock; they are purchasing it.

Mr. BUDGE. Yes.

Mr. KING. They still have tremendous freeboard for going out and obtaining leases in the field. They have not been successful in finding the ones that they want at the moment, apparently.

Mr. BUDGE. Now there is consumption of phosphate rock in various processed forms. You are not competitive with Westvaco, for example?

Mr. KING. They are very good customers of ours. As a matter of fact, we sell them a lot of high-grade rock.

Mr. BUDGE. There is no question in your mind but what the uses of their product has increased very substantially in recent years?

Mr. KING. It has. Yes, indeed.

Mr. BUDGE. You see no reason why it will not continue to increase in view of the many new uses to which it is being put, do you?

Mr. KING. There is no one in this room that has more faith in it than I have, Mr. Budge.

Mr. BUDGE. If this is not a trade secret, something in your company that should not be divulged—I do not want you to divulge it if it is—how much does it cost to mine phosphate rock, roughly?

Mr. KING. At the grassroots, 35 cents a ton. At nominal depth of overburden back on a gentle slope, 200 feet, I would say that your cost would be about $1.60 a ton. Under a 14-to-1 stripping ratio, your cost would be about $2.80 a ton. In other words, how long is a piece of string?

Mr. BUDGE. I was interested in your observation there, because I noticed some testimony here this morning where the miner is paying 25 cents to the Government and selling the rock for $2 and upward. Apparently that would not be too far out of line in view of the mining costs. Or would it?

Mr. KING. Actually, that is a peculiar situation that is involved in some Indian agency land. The standard royalty fee, the accepted one is 25 cents a ton for high-grade rock. In other words, with a value of approximately $5 a ton at railhead, 25 cents a ton is the normal or nominal royalty figure.

Now in this particular instance that the Indians are collecting the royalty, the figure of 30 cents a ton applies to the high-grade rock, I am sure, and insofar as the low-grade rock is concerned, I do not know that it applies. That is the cheap material that is going in traffic in that particular operation.

Mr. BUDGE. I still would like you or some other witness to tell me on this legislation just why the removal of the State boundary is going to result in monopoly.

Mr. KING. I am sorry if you got that impression. I have not tried to make that in my statement or in my discourse on my statement.

I am not suggesting monopoly, Mr. Budge; I am suggesting the fact that there is a tremendous lineal strike length of phosphate land available to any individual or corporation under the present statutory limits. And, furthermore, I am suggesting that all of the attractive properties, that is, the ones of real economic significance, have been in effect taken up.

You do not think for a moment that we would be bidding on 518 acres of land that I described if such were not a fact. We have, of course, been in the field now for better than 50 years, and we know the western phosphoria pretty well.

Mr. BUDGE. Have you always been an American corporation?

Mr. KING. Always, ever since the inception in 1903.

Mr. BUDGE. I did not know that, and I am glad to know that you pioneered.

You do not feel, then, that the enactment of this legislation will result in placing the phosphate industry under any form of monopoly?

Mr. KING. The only thing, I simply suggest it by inference, if you will, by the fact that only 20 percent of the Idaho acreage is within the maximums that I speak of, and the total that is presently leased in Idaho is 26,700 acres, and that is held only by 12 individuals and corporations presently.

Mr. BUDGE. Apparently, if they were to utilize this additional acreage by lease, they would have to get outside of this economic radius that you have talked about. Your company has just gone 35 miles.

Mr. KING. That is correct.

Mr. BUDGE. Would it be logical to assume that any additional leasing by the other companies interested in the legislation would be outside of this economic radius you are talking about?

Mr. KING. We are frank in admitting that our interest in the Dry Ridge deposit I speak of is strictly for the future. In other words, it is a reserve which we intend to develop and hold against our future requirements.

Mr. BUDGE. Which would probably be true with the rest of the companies, would it not?

Mr. KING. That would be absolutely true. What I suggest by that, Mr. Budge, is that if you have 10,240 acres available to people, they will go out and within a very short time whatever is left in the field will be placed within the people that can afford to put the properties in their hip pocket, obviously, and held against the future. It will have a deterring effect against the ability of some other outside lessee to come in and pick up a parcel of land. It is not a comfortable nor healthy situation to our mind.

Mr. BUDGE. I would think in the lease you described that your company entered into you would already have that situation.

Mr. KING. I would expect that to be true, yes, sir. I made that statement.

Mr. BUDGE. Thank you.

Mr. ROGERS. One more question, Mr. King. There has been some discussion in hearings and some indication there might be some uranium deposits or recoverable uranium in these phosphate deposits. Would you enlighten us on that?

Mr. KING. Yes, sir, I would be happy to.

We have had several uranium booms in our country, with the promiscuous selling of scintillometers and Geiger counters to people that work in drugstores and so forth. The western phosphoria contains limited amounts of a uranic oxide called tuoyomite. The average of the field is 0.015 percent uranic oxide. The lixiviation of phosphate rock with sulfuric acid produces phosphoric acid. In that procedure or process you dissolve the uranic oxide out of the phosphate rock in converting the sulfuric acid to phosphoric acid, if you will. So that very simply byproduct plants can be installed. In fact, the Atomic Energy Commission have subsidized a couple of those presently operating, I understand, in Florida.

Whenever you treat phosphate rock with sulfuric acid to make phosphoric acid by the wet method, you dissolve uranium out of the rock. As I say, by a very simple byproduct step that uranium can be made a part of the stockpile of energy.

Our uranium content is slightly higher than it is in Florida. In pounds of uranium, while it may sound infinitesimal as far as the content assay is concerned, in pounds of uranium it may be a very important factor. So it is not only a byproduct of the rock itself, it can become a byproduct of the actual end use of the rock in that it goes through lixiviation treatment.

Mr. ROGERS. Could it amount to a very valuable substance insofar as the determining of the economic feasibility of producing phosphate?

Mr. KING. I would prefer you did not put it on a basis of economic feasibility. It is a very minute amount of uranium, and in all fairness the AEC are presently harassed with a little bit too much

uranium. It may, however, make the atomic bomb that does the business. I do not know.

Mr. ROGERS. What I am getting at is this: As a byproduct of phosphate, how much would it contribute percentagewise in the determination of the economic feasibility?

Mr. KING. It would be a function of the amount of western rock that found its way into phosphoric acid manufacture. Presently there are three plants in the Western United States that convert phosphate rock to phosphoric acid by the wet method. Actually one is in Canada. The Consolidated Mining & Smelting Co., at Trail, British Columbia. One at Anaconda Co., Anaconda, Mont., and the third one is Western Phosphates, Inc., at Garfield, Utah. Those three plants are the only three plants presently making phosphoric acid by treatment with sulfuric acid and phosphate rock.

Mr. ROGERS. Are there any other products aside from uranium that might make the phosphate business inviting?

Mr. KING. Yes, sir. There are substantial quantities of vanadium. Presently the red salt of vanadium is a drug on the market. But the Anaconda Co. have for years recovered as a catalytic byproduct the vanadium in the western phosphate rocks. They are presently the only company that has a recovery plant for that purpose because of the market conditions.

But, again, vanadium oxide in the mineral form that it exists in phosphate rock is easily extractible by normal methods of treatment with sulfuric acid, and it can be recovered catalytically in a very simple plant. It is a matter simply of a market for the salt.

Mr. ROGERS. There is one other question, Mr. King, I wanted to ask before. You are familiar with the fact that we had hearings at an earlier date this year on this particular piece of legislation?

Mr. KING. I heard about it in April, sir.

Mr. ROGERS. That is the question I wanted to ask you. Were you advised of those hearings?

Mr. KING. No, sir.

Mr. ROGERS. Or that there would be hearings?

Mr. KING. No, sir. The first word we had that this bill was before your group in the House was when we had heard that you had passed it over from committee. That was the first inkling we had that such legislation had been composed.

Mr. ROGERS. And your company is and has been associated with the phosphate industry for a great number of years?

Mr. KING. We are the oldest people in the business; yes, sir.

Mr. ROGERS. You were operating in this particular western area at the time?

Mr. KING. Yes, sir.

Mr. ROGERS. I wanted the record to show, Mr. King, that you came to my office in company with another man and advised me that you had not been advised that such a piece of legislation was under consideration by the committee at the time and that any representations to that effect were just not true.

Mr. KING. Yes, sir.

Mr. ROGERS. Are there any further questions?

Thank you very much.

Mr. KING. Thank you, gentlemen.

Mr. ROGERS. I think we have one other witness this afternoon. Is Mr. John Hall present representing the Potash Company of America, Carlsbad, N. Mex.?

Mr. HALL. Yes, sir.

Mr. ROGERS. You may identify your self and proceed.

STATEMENT OF JOHN W. HALL, GENERAL SALES MANAGER, POTASH COMPANY OF AMERICA, WASHINGTON, D. C.

Mr. HALL. My name is John W. Hall. I am general sales manager of the Potash Company of America, located in its Washington office. I have been associated with the Potash Company of America, in this capacity, for approximately 6 years.

The purpose of H. R. 8394 is to remove the State-line limitation on acreage which may be taken under lease for phosphate-mining purposes. The Federal Mineral Leasing Act of February 25, 1920, as amended, provides that 10,240 acres of phosphate land may be taken by any lessee, but for some inexplicable reason the acreage was limited to 5,120 acres of Federal leased land within one State. The sole purpose of any acreage limitation on lands leased under the Federal Mineral Leasing Act is to prevent any one lessee from securing such an excessively large acreage as to put it in a monopolistic position. This condition in no sense exists with reference to phosphate lands throughout the United States. The Bureau of Mines Mineral Yearbook for the year of 1953, gives an estimate of phosphate-rock reserves, mineable under present conditions, throughout the entire United States of 5.1 billion long tons, with a possible additional 49 billion tons available if improved technology is used. A generous expectation from 10,240 acres of first-class phosphate lands would give mineable reserves of possibly 35 million tons of phosphate ore. Certainly this relatively minor tonnage could in no sense create a monopoly in the light of the tremendous reserves which are indicated in the Minerals Yearbook.

In order to get into a commercial phosphate operation in the western area, Montana, Idaho, Utah, and Nevada, it is necessary for a phosphate operator to invest a tremendous sum in production facilities, whether the material to be produced is triple-superphosphate or elemental phosphorus. About the minimum amount which must be expended in order to get into a commercially competitive position would be $5 million with the probability that this figure would be doubled or trebled by the time the operator had been in operation for a few years. With such large investment in prospect, it is necessary that a lengthy reserve of the crude material be available.

Perhaps one of the best comparisons in checking on a reasonable limitation of acreage, is the situation which exists with regard to potash in the United States. Until about 30 years ago, the economy of the United States was completely dependent upon European sources for its potash. In the late 1920's, commercial deposits of potash were found in the area near Carlsbad, in New Mexico, and since that time five large operators have entered into production with a sixth plant now near completion. In the early stages of operation, the producers were limited to a total of 15,360 acres of potash-bearing lands, but subsequent developments have resulted in a modification of this

limitation so that it is now possible for a potash operator, working under Federal leases, to secure an additional acreage of 2,560 acres adjacent to its existing operations and a further amount of 10,240 acres at a separate location. There is no barrier with respect to the foregoing total of approximately 27,000 acres because the acreage is located within one State. The need to have fully adequate reserves is very clearly shown in the history of potash. In the case of my own company, which commenced commercial operation on November 1, 1935, there has been a fourteen-fold increase over a period of about 20 years. The same situation is true with respect to the first operator in the Carlsbad field, which has had an even greater percentage of increase over approximately 25 years time. It is necessary in any mining operation to have sufficient reserves to permit expansion as the market developments occur and this is as true in the case of phosphate as it is with any other mineral.

Our interest in H. R. 8394 is due to the fact that my company has just commenced its acquisition of Federal lands. Its first exploratory work was on fee land but, within the past year, pursuant to a substantial bonus bid, it secured its first Federal lease totaling 845 acres. It is our hope and expectation that within the next 12 months it will be possible to get in preliminary commercial operation. If our development work indicates sufficient reserves, it is probable that we will soon commence the expenditure of substantial sums in the construction of production facilities, either for triple-superphosphate or elemental phosphorus. When, and if, this situation occurs, it will be necessary for my company to have the reasonable expectation of a long-lived reserve if we are to justify the expenditure of the substantial sums which are now indicated. Therefore, the company's future plans will be influenced by the acreage-limitation policy adopted for the leasing of phosphate lands.

Certainly if 10,240 acres of phosphate mineral reserves is not considered monopolistic when located in 2 States, it can no more be considered monopolistic if the same acreage is located within 1 State. We should like to urge upon this committee the removal of any State-line barriers with respect to the issuance of phosphate leases under the Federal Minerals Leasing Act.

Mr. ROGERS. Thank you, Mr. Hall.

Off the record.

(Discussion off the record.)

Mr. ROGERS. Mr. Budge, do you have any questions?

Mr. BUDGE. I think not, Mr. Chairman.

Mr. ROGERS. Mr. Utt.

Mr. UTT. I have no questions.

Mr. ROGERS. Mr. Hall, let me ask one question? Where is this acreage located that your company has acquired?

Mr. HALL. It is in Idaho.

Mr. ROGERS. In Idaho?

Mr. HALL. Yes, sir.

Mr. ROGERS. You say that is 845 acres. How many acres do you think you will have to have in order to make a sizable expenditure?

Mr. HALL. I cannot answer that question, Mr. Rogers. We have in addition 300 acres in fee land, or a total of 1,145 acres at the present time.

(Discussion off the record.)

Mr. ROGERS. Thank you, Mr. Hall, for your testimony.

Mr. HALL. Thank you.

Mr. ROGERS. The committee will stand adjourned until 10 o'clock tomorrow morning.

(Whereupon, at 3: 50 p. m., the subcommittee adjourned, to reconvene at 10 a. m., Thursday, May 24, 1956.)

PHOSPHATE

THURSDAY, MAY 24, 1956

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON MINES AND MINING
OF THE COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D. C.

The subcommittee met, pursuant to recess, at 10:10 a. m., in the committee room, New House Office Building, Hon. Walter Rogers (chairman of the subcommittee) presiding.

Mr. ROGERS. The Subcommittee on Mines and Mining will come to order for the further consideration of H. R. 8394.

I believe our first witness this morning is Mr. W. G. Maloney, secretary-maanger of the Mining Association of Montana. Mr. Maloney, if you will come to the witness table and identify yourself, you may proceed.

Mr. BUDGE. Mr. Chairman, may I make an inquiry?

Mr. ROGERS. Mr. Budge.

Mr. BUDGE. Has the Chair received resolutions or letters from the other mining associations in the West on this subject?

Mr. ROGERS. Off the record.

(Discussion off the record.)

Mr. ROGERS. On the record.

The staff is instructed to compile data and information concerning the communications that the committee has had, both pro and con, on this legislation, and to list the proponents and the opponents of the legislation, and to make a part of the file all the letters and communications that have come in on it. I think that will do it. If you wish to add something to it, it is all right.

Mr. BUDGE. I think that will be fine, Mr. Chairman.

Mr. ROGERS. You may proceed, Mr. Maloney.

STATEMENT OF W. G. MALONEY, SECRETARY AND MANAGER, MONTANA MINING ASSOCIATION

Mr. MALONEY. My name is W. G. Maloney. I am secretary and manager of the Montana Mining Association. I am here representing that organization and its mineral industry members. I appear here to speak of favor of H. R. 8394.

The phosphate industry is important to Montana not only for its present significant contribution to the State's economy, but we hope for its even greater future contribution. H. R. 8394 will help preserve the present industry, and will encourage and permit future expansion by providing adequate ore reserves.

Our phosphate industry represents a very high capital investment for each operation. In fact, generally the investment is several millions of dollars. These large investments are necessary in order to put the raw ore into marketable form, and in order to provide large volume operations for the purpose of reducing costs. Adequate ore reserves are required to permit growth and expansion of any one operation. The present State limitation of 5,120 acres of Federal phosphate leases does not provide sufficient reserves for anticipated expansion.

The phosphate deposits of Montana have been shown by State and Federal surveys to be of great extent. Nearly all of them are owned by the Federal Government. The removal of the present State line limitation, thereby permitting an operator to have the present allowable 10,240 acres of Federal land at any selected location, will provide needed reserves. State lines are arbitrary boundaries and have no relation to the phosphate deposits. We strongly feel the present State-line limitation retards the continued growth of Montana's phosphate industry. This industry, like the rest of the industry operating on western phosphate, is at a disadvantage competitionwise because of high transportation costs to markets. Plant expansion provides one way of reducing costs and thereby staying in and expanding markets.

Most of our Montana phosphate operations obtain their ore by underground mining with its high cost. One of our largest operators works a phosphate bed only 3½ feet thick. This operation is faced not only with high costs but with extremely rapid mining out of acreage.

We don't want to see our present phosphate operations handicapped in growth by inadequate ore reserves. We want to see them, and others we hope will come into our State, have reserves which permit growth and expansion. Certainly, we have plenty of phosphate in Montana for many operations for a long, long time.

To date in the present public hearings of this committee there have been many references to lessees, reserves on western phosphate land. Before acquiring a Federal phosphate lease, the successful bidder does no prospecting on it. After acquiring it, he prospects by mapping, drilling, trenching, or tunneling, and makes his estimates of grades and tonnages. It is important to remember that the tonnage and grade of such reserves cannot be known until they are opened up and mined. There are many factors that make it impractical, or oftentimes impossible, to make much more than an intelligent guess or at best a very rough estimate as to reserves, and there is always the risk that undetectable conditions develop in mining the ore that can reduce the reserves to a fraction of the original estimate.

As a previous witness has already pointed out, the Western Governors Mineral Policies Conference held in November 1955 specifically urged a reappraisal of Federal phosphate acreage limitations to meet the requirements of modern mining and refining needs.

The Montana Mining Association endorses this recommendation and urges prompt enactment of H. R. 8394 into law.

Mr. ROGERS. Thank you, Mr. Maloney. The Chair recognizes the gentleman from Colorado, Mr. Aspinall, for any questions he may have.

Mr. ASPINALL. Mr. Maloney, what are the procedures used in trying to find out what the extent of the phosphate deposits might be in a certain area?

Mr. MALONEY. Of course, the initial examinations, as I stated in there, are used merely for a guessing nature as to what might be the extent of the ore deposits. There has been mentioned, and I have heard most of the discussion, what is referred to as proven methods of ascertaining the ore bed. In Montana there is no such thing as any proven method of estimating ore reserves until such a time as you have it partially mined out by actual development. That means shafts, tunnels, drifts, crosscuts. When I talk of tunnels, one of our operators in one of their programs right now is running an 11,000-foot adit to tap or intersect a 3- to 3½-foot ore bed.

If I may digress on that on costs, I would say minimum footage costs, that is, per running foot, would be $40 to $50. Now it could run much higher. If you encounter underground watercourses, or you run into faulty conditions, that is, where you may encounter a fault with quite a horse of waste or a drag, whatever way you may wish to refer to it, it would take timbering.

Mr. ASPINALL. Why cannot you core drill?

Mr. MALONEY. You could core drill. Say we have a vein that we think may stand on the vertical or dipping deeply hundreds of feet. That is our guess. We start a turn drill down there, and we might run out of ore in 10 feet. Maybe we would go 20 feet before we drill through the ore. That is, drilling downslope on the dip.

Mr. ASPINALL. I come from an area where you have perhaps 20 to 30 or 40 core drills within a 20-acre area to determine the presence of a certain ore. Why could you not core drill in that procedure, with the understanding that, as I understand it your deposits seldom get below three or four hundred feet below the surface of the ground, at least those that you are presently operating?

Mr. MALONEY. The phosphate beds in Montana are deeply dipping. I have a habit of referring to them as veins on account of my experience in the Butte mines, where we call everything on the vertical vein. So our phosphate dips similar to our known veins of other material. But in a highly faulted vein you may be in it for 10 or 15 feet in depth or you may be in it 50 or 100 feet, driving on the strike instead of the dip, and you encounter a fault, and all you will have is a face of waste. That is, the ore is gone. As to where it has gone, if there is a drag or a fault in there in the waste, it may show you the direction. But God only knows how far the fault may have moved the vein. It may have moved it a foot or 2 feet. It may have moved it 20,000 feet. No one knows.

Mr. ASPINALL. You would not run an adit for 20,000 feet to try to find the vein?

Mr. MALONEY. What is that?

Mr. ASPINALL. You would not run a tunnel 20,000 feet to try to find that vein. You are not likely to run a tunnel unless you do have a showing of close proximity of the ore. You would not run a tunnel over 10 or 15 feet.

Mr. MALONEY. Unless you would have a showing, or unless you by, say, diamond drilling or long-hole drilling knew there was a vein at a certain depth, you would not drive a tunnel in there at all.

Mr. ASPINALL. My question is simply, Why cannot you use diamond drilling in order to find out where your deposits are?

Mr. MALONEY. You cannot ascertain with any degree of accuracy by drilling the phosphate beds in Montana.

Mr. ASPINALL. It is your opinion if you had just twice as much land as you have at the present time you will have a better or more definite certainty of ore to firm up your future operations whether you need them or not. Is that it?

Mr. MALONEY. Yes; it would give us an opportunity there. I can use one mine's operation as an illustration, where they have driven 4 adits varying in length from, say, 400 to 4,000 feet. I think I am conservative in the 4,000. Those adits then would be abandoned after they encountered the ore. That is, the ore would get to be of too low a grade, or other difficulties in mining, and they would not be able to mine it profitably, and they would have to close it down.

Instead of sacrificing that expanse of territory, the firms, who spend, say, a quarter or a half or a million dollars on development costs on adits or shafts or crosscuts wish to retain that property until some time in the future when market conditions may be sufficiently high or due to new modern methods they can go back and mine that ground and not sacrifice the original investment.

It is necessary to make such an investment in Montana. I know in testimony I have heard before in some places in Idaho they do not have to do this expensive prospecting where they may have a big flat bed. Like your reference to turn drills on a small area, that is possible where you have a flat deposit. I would say, there it is easy to ascertain by drilling the reserves. You can, in flat deposits, ascertain fairly well the known reserves. But in vertical, in an anticlinal structure, where it has been folded and you have got the vertical veins, and then you have the faults either cutting them off in depth or throwing them on the strike of the vein, they will throw them most anywhere. Then you have got to look further, and you would diamond-drill in that case to see if you could locate it. But then, to know what the reserve is, again you must drive further and develop it.

Mr. ASPINALL. Let me ask you one more question. Do you know, as representative of your association, just how soon any of these operations which have holdings in Montana and are now operating, are likely to have to stop operations because they do not have sufficient reserves in hand?

Mr. MALONEY. I could not make a flat statement to that, Congressman.

Mr. ASPINALL. Are any of them likely to have to shut down within the next 25 years if the operations continue——

Mr. MALONEY. As they are now?

Mr. ASPINALL. As they are now, with a reasonable tendency toward more call for the ore?

Mr. MALONEY. I believe—and I would like to see the same question asked of a witness who follows me—I believe there is one operation that may get to that condition. Let us put it this way: That in one of their mining programs where they have quite a bit of reserves it is about half mined out now. They have two additional leases coming up that have not been completely surveyed by the Government and turned over to them. I think that has been in process, say, for a

year, and they may have to wait some time further before they start developing these two additional leases, Congressman. But here is this reserve that they are working on that is getting mined out. They have got these two leases. Now they will start their development program on them, and it will take them a couple of years, to develop this new program or these new leases they are waiting on.

This program that they are driving over here will be completely mined out, and if they do not have this developed, and then if they do not get some more leases close by, they may be out of business.

Will that answer your question?

Mr. ASPINALL. That is all right. Thank you very much.

Mr. ROGERS. The gentleman from Idaho, Mr. Budge.

Mr. BUDGE. Mr. Maloney, on yesterday, one of the witnesses indicated that most of the good phosphate properties had already been taken up. With that thought in mind, would you feel that the present acreage limitations within a State boundary is a deterrent to the attraction of new operators within the State of Montana?

Mr. MALONEY. I do not think all the good locations have been taken up, because they are not known. They do not know the good locations. I know the Montana firms now that are operating are looking and exploring, and they have crews of geologists out at all times looking for more reserves, because, as I mentioned, I believe they have a multimillion-dollar investment. I said several million. From the testimony heard before we know that is very conservative. One furnace may cost in the neighborhood of $5 million or more. It may hit $7 million or $8 million for a furnace, and then where they put in additional furnaces they may have up to 30 or 40 million dollars investment in the plant. It takes a terrific reserve to keep that going, and certainly with adding to the plant and adding to the millions here on the plant, and then on the underground mining—I am still talking in millions. I am not talking in thousands when I say we have to develop by underground mining methods ore reserves, that we cannot get a clear picture of them by drilling. We have got to develop them by underground mining methods, which runs into a half-million- or a milllion-dollar investment.

Mr. BUDGE. Do you feel that this acreage limitation within a State—of course, we all understand that we are not attempting to increase the total acreage allotted to any lessee.

Mr. MALONEY. No.

Mr. BUDGE. Do you feel that this limitation within a State has acted as a deterrent to new operators coming into the State of Montana?

Mr. MALONEY. I am reasonably sure it is acting as a deterrent from bringing in new operators.

I think one point brought out yesterday, a very outstanding point, was where a new company coming into Montana got on the new deposit right on the State line. So they are sitting on top of the world. They take 5,000 acres in one State, 5,000 acres in the other, and they have still got their facilities centrally located. They can put a plant up there and they have access to 10,240 acres. You move 200 miles over here more in central Montana, and you have a plant is limited to 5,120 acres. When the phosphate deposits were laid they were not laid according to State lines. I think the State

lines insofar as this is concerned is an artificial boundary that should not be there.

Mr. BUDGE. In other words, the man who is fortunate enough to be able to locate so he can mine on both sides of the artificial line has double the acreage and double the chance for permanent development that the man located in central Montana might have?

Mr. MALONEY. I think it is a reasonable assumption, Congressman, to presume that had two of our larger operators known of this centennial deposit and inspected it, they might have located up there, providing, of course—there are other considerations, waterpower, and so forth, and so on to be taken into consideration. But they might have been up there where they could have access to all of this new territory.

Mr. BUDGE. With respect to the present operators within the State of Montana, do you feel that this acreage limitation within the boundaries of the State of Montana is a deterrent to their expansion of their operations?

Mr. MALONEY. Yes, and it is a great deterrent to their business planning, to planning for a long-range program, because as the veins or the beds that they are working decrease or change in value, they cannot get high grade. Such as one firm who is buying from a firm in Idaho a high-grade ore that they mix with low-grade, which enables them to mine this low-grade underground deposit. They had enough to sweeten it up with the high-grade they were bringing in from Idaho.

When we had our increases in freight rates and the cost went up, that made the difference, and they had to quit. So they quit purchasing that ore because the difference in the freight rates made it uneconomical for them to bring this high-grade ore in to mix with the low-grade. If they were forced to give up this low-grade deposit they spent, say, a million dollars on developing in order to go out here and take up some additional acreage, and lose that, they cannot plan. It is not good business. It is not good mining. It is not conservation mining. Because the minute a firm releases an underground operation and lets it go and somebody else is going to get it, there is no upkeep. That whole thing may cave in, and it is gone. Then mining will not be resumed there. So we lose there. This is definitely a conservation memasure which should be taken into consideration.

Mr. BUDGE. That is all, Mr. Chairman.

Mr. ROGERS. Do you have any questions, Mr. Metcalf?

Mr. METCALF. Mr. Chairman, I want to welcome one of my constituents and an old friend to the committee. Many of the members of this committee for years have known Carl Traverman, former secretary of the Montana Mining Association. His death was a great loss to the mining industry all over the West. Mr. Maloney is a worthy successor to Mr. Traverman.

Mr. Maloney, Anaconda Copper Mining Co. is one of the large producers. Are they a member of the Montana Mining Association?

Mr. MALONEY. No; they are not.

Mr. METCALF. The Montana Mining Association is an organization, I understand, of small miners.

Mr. MALONEY. Small miners. There is a definite limitation on the number of employees that a company may have and still join the Mining Association of Montana. A large company might have a subsid-

iary working in the State with less than 500 people, and they would be welcome into the Mining Association of Montana. But if they had over 500 working within the State, according to our bylaws we could not accept them into membership. That is true.

Mr. METCALF. Testimony has already been given that the phosphate deposits in the West are rather extensive and farflung. Can you tell me about how far from the State line some of the phosphate deposits in Montana are?

Mr. MALONEY. If we went east—that is the longest distance—by road it would be approximately 900 miles, I would say, down through Bozeman, Miles City, up to Lewistown, until you hit the State line there. North, of course, the distance would not be as great. To get north you would have to go to Missoula and work up north. It could be four to five hundred miles.

To go straight west it would be approximately the same distance. To cut then to Missoula and south it would be approximately 300 miles; over 300 miles; let's put it that way. An to hit the State line, I imagine, about 150 more miles.

Mr. METCALF. Yesterday Mr. Dyer testified for the Simplot Co.

Mr. MALONEY. Yes.

Mr. METCALF. Do you know the location of their leases?

Mr. MALONEY. On the Centennial Range there on the Idaho-Montana border, right on the borderline.

Mr. METCALF. So an organization such as the Simplot Co. who had leases on the Montana-Idaho border could have in compact unit the complete 10,240 acres?

Mr. MALONEY. Right.

Mr. METCALF. On the other hand, an organization, a member of the Montana Mining Association, that had leases in the center of Montana might be many hundreds of miles from the border?

Mr. MALONEY. Yes.

Mr. METCALF. And could only have 5,120 acres?

Mr. MALONEY. That is all.

Mr. METCALF. I gathered that there are areas in this western phosphate field where 5,120 acres would be adequate reserves. Is that right?

Mr. MALONEY. Yes, I suppose there are some areas with which I am not familiar and could not discuss or talk on. I suppose where they have the thick beds, you know, close in, like where there are places where I don't imagine they have to run from 5,000- to 12,000-foot adits to tap a vein. And, of course, with the inaccessibility of our roads and mountains, it is sometimes necessary to run a long, expensive adit, too, because you could not get around by roadway. You would tunnel through the mountains to reach a deposit you hoped and expected might be there.

Mr. METCALF. By the same token, there might be areas where you need much more than 5,000 acres to have adequate reserves?

Mr. MALONEY. Yes.

Mr. METCALF. A question was asked yesterday, and perhaps you can answer it. Do you know how much is paid for leases on the State land in Montana?

Mr. MALONEY. The State lands would be 75—maybe I had better put it this way: You get a prospecting permit—we are still prospectors out there—and you pay 75 cents an acre for the lands you take

up, with a flat 20-percent royalty. That is good for 2 years. At the end of 2 years, if you did not find ore in commercial amounts, you could have it renemed for 1 year. During this period of time that you found commercial ore, then the State bureau of mines and geology would come in, send a geologist in, would estimate your ore, and then they would set a royalty, a minimum of 10 percent. That is as low as it could go. But whatever they set, it would be discussed, and they would set then a new royalty base, and every 10 years that is renegotiable.

Mr. ASPINALL. Will my colleague yield?

Mr. METCALF. I will be glad to yield.

Mr. ASPINALL. What is the qualification or what is the procedure as to the necessity of mining after the ore is found, producing after the ore is found?

Mr. MALONEY. I do not understand the question.

Mr. ASPINALL. Do you have to produce? Do you have to take out the ore or can you just continue to pay a flat rental?

Mr. MALONEY. You pay the flat rental at all times. You would pay then whatever royalty they set on it.

Mr. ASPINALL. Only on what you produce?

Mr. MALONEY. Yes; only on what you produce.

Mr. ASPINALL. Thank you very much.

Mr. METCALF. Is there any acreage limitation or quantity limitation on the amount of land or amount of reserves that you can lease on State land in Montana?

Mr. MALONEY. Not that I know of. I do not believe there are, no.

Mr. METCALF. So, to pursue the question of the gentleman from Colorado, a company could lease reserves for 20 or 30 years in the future and not pay any royalty but just pay the rental and hold those lands?

Mr. MALONEY. Yes; on State lands.

Mr. METCALF. Any amount?

Mr. MALONEY. Yes; any amount of land.

Mr. ROGERS. Will the gentleman yield?

Mr. METCALF. That is all.

Mr. ROGERS. What length of time is the primary term used? The primary term you can pay rental.

Mr. MALONEY. You would pay rent all the time on an acreage basis, plus royalties.

Mr. METCALF. How long a lease can you get?

Mr. MALONEY. The first is for 2 years, and then it can be renewed 1 year. Then, if you have commercial ore, they come in. Now, if you did not discover commercial ore at the end of that third year, you are out of luck.

Mr. ROGERS. That is the point I was getting at.

Mr. MALONEY. Yes. I did not understand you, Congressman. At the end of the third year, if you had no ore there, it is taken for granted you quit, you could not hold on to it, I would say.

Mr. ROGERS. Mr. Utt.

Mr. UTT. I have no questions.

Mr. ROGERS. Mr. Maloney, just a few questions.

How many members do you have in this Montana Mining Association?

Mr. MALONEY. I have approximately between three and four hundred members. That seems to be very large membership for a State, but——

Mr. ROGERS. Let me ask it this way: I should have said, "involved in the mining of phosphate."

Mr. MALONEY. How many members?

Mr. ROGERS. Yes.

Mr. MALONEY. We have approximately 6 or 7 companies in those I mentioned. There are three of them producing, let us say now; see? One is merely mining and sells to the other processors and producers. Then we have smaller ones who have operations or own land of their own that they are just holding up. They worked it a while back and they sell as they want to and as they can.

Mr. ROGERS. That is fee land where they do not have to worry about rent?

Mr. MALONEY. Yes. There is not much fee land.

Mr. ROGERS. Those that are producing and those that are mining phosphate commercially at the present time, does your association, Mr. Maloney, have any information or data as to the amount of reserves each one of those companies are claiming?

Mr. MALONEY. My organization—in the files, anything like that—no. I do not know of my own knowledge their trouble in developing the reserves, and I know on one operation they are part way through or half way through one project—let's call them projects—they have, and they have two new once coming up, and have geologists out looking for several more now to locate on because, as I mentioned befre, they had to quit purchasing this ore on account of the freight rate. They are faced with a possible shutdown of this one deposit. So they have to replace that acreage right now.

Mr. ROGERS. The one that you have reference to that is about to use up the present deposits and move into some other place to get more phosphate, about how many acres of Federal land does that particular company have under lease at the present time?

Mr. MALONEY. Another witness will answer that more definitely than I could, but I would say approximately 4,000 acres. Let's put it that way. They have not reached their limitation yet because they have not been ready to reach that limitation. In other words, as I hope my testimony has shown, it takes a number of years to develop a mine and a number of years to get ready to take additional acreage, to know what they have. They will have a lot of this mined out by the time they are ready.

One firm started in 1950, and it is one of their projects that is getting partially worked out now, their original project. They are developing the other projects to draw the ores from. By the time that is fully developed, this one will be exhausted.

Here are the two new ones they have now, and they will start developing, and they have to get some more right away, and that is where they are going to go over the 5,100 acres when the time comes, which is not too far in the future.

Mr. ROGERS. This particular company you have in mind, how far in the future do you think it will be?

Mr. MALONEY. When they will need additional acreage?

Mr. ROGERS. Additional acreage within the State.

Mr. MALONEY. I would say it would be—for actual mining purposes, approximately 5 years. But in order to plan year by year they have to have that in the planning boards and in the planning stage 2 or 3 years. Those are approximations. I might be off on it.

Mr. ROGERS. Yes. In concluding that there is a major depletion insofar as present deposits are concerned, are you referring now to all of the phosphate deposits in that particular land?

Mr. MALONEY. No. I would only be referring to, say, one project in their group of projects that they have. One within the main domain. I would like to break it down that way.

Mr. ROGERS. I mean, in the particular land from which they are taking phosphate at the present time, are you referring now to just one deposit of phosphate in that particular acreage, within the confines of that acreage, or are you referring to all of the phosphate available in that acreage?

Mr. MALONEY. I am referring to the one project only that they are working. That is the one project they know pretty well the reserves because they have got it developed, Congressman. In that project they can give you, or I imagine their engineers or geologists could give you, a fairly definite reserve picture.

Mr. ROGERS. Mr. Maloney, let me ask you this, which I am sure you know: Generally speaking, in Montana, how many layers of phosphate would there be under 1 acre of land going straight down?

Mr. MALONEY. I might be wrong, but I would say there are no layers underneath because we are on the vertical, and we are mining underground. Our veins there will lie on a dip like this [indicating], where your horizontal or bedding planes will lay right flat here. So that where it is relatively easy in some of them to churn drill, you take a vein like this [indicating] and you have a fault hit it here and throw this away, and you may only have 50 or 100 feet down the vein, and it is gone. As you go in on the strike, that would be gone. They would mine it. You might hit another different type of fault there that will throw the whole thing over that way [indicating]. There are all kinds of faulted conditions not only in phosphate, but that is true of other types of mining, too.

Mr. ROGERS. How much of the State land of Montana would you say has phosphate deposits in them?

Mr. MALONEY. I would say not very much, but I do not know. I would have to say I do not know, but I do not believe they have too much phosphate on State lands.

Mr. ROGERS. Mr. Maloney, could you give us any idea percentagewise as to the breakdown on phosphate lands in Montana generally, that is, what percentage would be Federal lands, what percentage would be State, what percentage would be Indian lands, and what percentage would be private fee owned lands?

Mr. MALONEY. I do not know of any Indian lands that have phosphate. Again, I could look that information up and put it in in better form for the committee. There is not much fee land that I know has phosphate on it. I know 2 or 3 small ones around Butte.

Mr. METCALF. Will the chairman yield?

Mr. ROGERS. I will be glad to yield.

Mr. METCALF. Anaconda Copper Mining Co. has large phosphate operations in Montana and most of their operations are fee land, are they not?

Mr. MALONEY. Their operations are now in Idaho.

Mr. METCALF. They are fee lands?

Mr. MALONEY. That is all fee land and has been all flat bedded. But I hear now Anaconda is going to underground mining, or they have quit the underground mining and gone to the other. I am not quite sure. I should not make that statement. I do not know.

Mr. ROGERS. In Montana, Mr. Maloney, which company or which group, which groups—let us put it in the plural—are up to the point now that they are going to have to have additional acreage from the Federal Government land in order to expand their facilities in keeping with their present program or plans?

Mr. MALONEY. I think both of the large processors and mining people. I think both of them are approaching where they will have to get additional reserves. Of course, the new company who has recently started that has acreage on each side of the line, I would say they are pretty well fixed because they can go on either side.

Mr. ROGERS. Is that Monsanto and Terteling?

Mr. MALONEY. Monsanto is not in Montana. I do not believe they have any holdings at all. I think they are to testify later, but as far as I know, Monsanto has no phosphate holdings. I know they have no operations in Montana.

Mr. ROGERS. What about Terteling?

Mr. MALONEY. Simplot has just come in on the Centennial Range on the State line there and has acreage, and they are just opening theirs up. They may be into some kind of production, but I have not any information on their operation.

Mr. ROGERS. What company is it, Mr. Maloney, that you are referring to that is nearly to the point of having to have more land right away?

Mr. MALONEY. I think I would refer to both the operators, and the two I had in mind are the Victor Chemical and the Montana Phosphate Products Co.

Mr. ROGERS. The records I have show that the Victor Co. has additional acres available to them now or obtainable of 2,590, and the Montana Phosphate Products Co. has available 3,280 acres. Do you know whether or not they have made efforts to get those acres?

Mr. MALONEY. I do not believe Victor has that much acreage left to acquire, the difference you quoted. I think their acreage must be 4,000 now. I do not believe those two leases in the mill now, in the process of being taken over, are included in that figure.

Mr. ROGERS. I see. Are those recent acquisitions?

Mr. MALONEY. In the past 1 or 2 years.

Mr. ROGERS. They have not developed those, have they?

Mr. MALONEY. They have not even had them turned over where they could develop them yet. You see, the slowness of acquiring the land, it takes, say, 1 or 2 years to acquire a new lease. It takes several years to develop a new lease. They have been in operation in Montana approximately, let us say, for 5 or 6 years. They have not had time to obtain their 5,200 acres of holdings on a reasonable plan. Let us put it that way—a reasonable plan of acquiring, developing, building their processing plants. It takes a matter of several years of planning, because if they go too far too fast, what happens? They go bankrupt. I do not care how much money they have got, they cannot make too many mistakes in a $20 million operation.

Mr. ROGERS. You said you had a bunch of people in your association who owned land in Montana, that is, phosphate lands, which they are either holding or mining some of it and selling it to processors. Is any of that land for sale at the present time, do you know?

Mr. MALONEY. No. The owners of that land are trying to hold it until such a time as they can profitably mine it. They have held it for several years. I am thinking of several people right in Butte that I know who are in the mining game. They are small operators. They work their phosphates.

I know one operation was somewhat similar to the one described here by a previous witness. He strip mined it, which we have very little of. In other words, with a bulldozer, which does not require much capital outlay, he could go in there and make a good profit off the top. In other words, skinning some off the top, and then shut down. Your big operations cannot operate that way. That is not good mining. It is not good planning. It is not good for a regular full-time operator who is thinking ahead 25, 30, or 50 years. And your big operations think ahead that way. That is the Butte Hills where they have been thinking ahead a hundred years and have a 50-year program out there. That is a different mineral.

Mr. ROGERS. You have heard a lot about the Government getting into competition with private individuals, and I and wondering whether this could not prove to be a case where, if the Government stayed out of the business, the fellows out there could let out their fee land and make a profit.

Mr. MALONEY. You mean the Government turn over the lands and let anyone take it?

Mr. ROGERS. I mean this: I mean the Government land is available, and there is also private land available with phosphate deposits. I am just wondering if some of the criticism that has been directed to the Federal Government for messing in private business would not be applicable here if you carried it out to its logical conclusion, because then the Federal Government says, "We are not going to give any more Federal land for this. You all use private land for that. Those people own that land and paid for it, and they are in business. You get your phosphate deposits from the private individuals and operate with them on a competitive basis."

Mr. MALONEY. Then, of course, the price, instead of averaging maybe $7 a ton, might go up to $700 a ton, and then some of the smaller owners or producers might be able to produce under an exorbitant price that the economy cannot afford to pay. That would be my answer.

Mr. ROGERS. That is the case in all these things where the Government gets criticized so much, is it not? Sometimes it is not appropriate, but it never comes out. That is the truth about it, is it not? I mean, if you did that and the Government stayed out of this land situation, it would make the price so high that nobody could afford it.

Mr. MALONEY. There are not sufficient phosphate reserves on fee land now to begin to furnish the economy of this country with the minerals necessary. I am talking about my section of the country. I do not know about Florida. That might be entirely different.

Mr. ROGERS. What I am thinking about is your group in the Montana Mining Association would not think it would be a contribution to socialism if we passed this bill?

Mr. MALONEY. We—at least—let me put it this way: I am not worried about it. I know I can speak for myself.

Mr. ROGERS. I believe that is all I have at the present time.

Mr. Dawson, do you have any questions you would like to ask?

Mr. DAWSON. I am sorry I was not here in the beginning. I have no questions.

Mr. ROGERS. Thank you very much, Mr. Maloney, for a very interesting statement.

Our next witness is Mr. James M. Gillet, assistant to the president of the Victor Chemical Works, Chicago, Ill.

Mr. Gillet, if you will take the stand and identify yourself for the record, you may proceed.

STATEMENT OF JAMES M. GILLET, ASSISTANT TO THE PRESIDENT, VICTOR CHEMICAL WORKS, CHICAGO, ILL.

Mr. GILLET. Mr. Chairman, my name is James M. Gillet. I am assistant to the president of Victor Chemical Works. Victor is an Illinois corporation with headquarters in Chicago.

We have seven chemical plants, located in Pennsylvania, Florida, Illinois, Tennessee, Montana, and California. Three of those plants are phosphorus plants where we feed phosphate rock into electric furnaces and recover the elemental phosphorus in the rock. One of these phosphorus plants is in Florida, one is in Tennessee, and the third is near Butte, Mont., at Silver Bow.

In Florida and Tennessee we own phosphate reserves in fee simple. In Montana we are dependent upon phosphate that we get from leases from the United States Government. We have no fee land in Montana or in the West, but we do have leases from the Government.

As you, Mr. Chairman, said a little while ago, we have 2,530 acres at present under completed leases and under development. We also have 1,243 acres which have been allotted to us but which so far have not been surveyed by the Government, and we therefore cannot do any work on them. We have done prospecting, of course, but until the Government finishes the survey we cannot go into any development work. Those leases were allotted to us 18 months ago. The surveys have not yet been made.

In Montana, our phosphate deposits, as Mr. Maloney said, are tipped up on end. We do not have any level deposits. We did have a lease on some property that we thought we could strip mine, but when we did some core drilling we discovered that the overburden was just about as hard as granite and was impossible to do anything with it. So we relinquished that property. That was an area of 960 acres.

The first mine that we began to operate was started by some other people a few years ago who thought they could mine it for fertilizer-grade rock. They drilled a tunnel into the side of the mountain about 2,000 feet long and found that they just did not have high-grade phosphate rock in it and it could not be used for fertilizer. Whether they were about ready to abandon the lease or not I do not know, but we came along just at the proper time and were able to acquire that lease from them. We have continued with the development of that mine. We have driven a tunnel a little over 2 miles into the mountain, and then every 100 feet or so we mine up to the surface of the mountain. In that way we have just about finished the development of that mine.

We know now for the first time how much phosphate rock we have in it.

At the same time we have been working on another mine where we have driven seven tunnels in various distances, from a few hundred feet to a few thousand, just to develop the property.

In the production of elemental phosphorus we do not use the same grade of rock that is used in the manufacture of fertilizer. The furnace charge consists of phosphate rock, that is, impure calcium phosphate, plus silica, plus coke. We found some 30 years ago down in Tennessee that it was not very wise to buy high-grade phosphate rock and dilute it with this silica when we could buy low-grade rock that had the silica already in it. Therefore, we began the use of low-grade rock, which is now commonly called furnace-grade rock, and we opened up enormous reserves of phosphate rock which had been considered to be of no value at all before that. The mining operations in Tennessee now are almost entirely confined to deposits which were passed over in the old days, or remining of deposits from which the high-grade rock was taken in those days.

These electric furnaces are very particular about what they will handle. The blend has to be just right. If it is not right, the furnaces do not operate right, and we are in trouble. Unfortunately, we have not been able in Montana to find any deposits that were exactly proportioned for use in the electric furnaces. We have deposits that vary anywhere from 5 feet to 25 feet in thickness. A portion of that may be high-grade rock, and the rest of it is lower grade rock, running way down to just a trace of phosphate.

If we have enough sources of rock, we can blend the materials from one source and another and get a charge which will operate satisfactorily in the furnace. That is why it is necessary for us to be taking rock from several different places at a time in order that we can produce our furnace charge.

We have recently installed a beneficiation plant in Montana so we could bring up the grade of some of this low-grade material and increase the amount that we can use.

We are not located near a State line. We are up near Butte. We are a hundred miles or more from the State line.

At one time we did buy some high-grade rock from the Idaho deposit and blended that with some of the low-grade rock from Montana, but that was expensive, and now that the freight rates have been increased from 21 to 25 percent it is prohibitive. If we had located our plant near a State line, we would be very much better off, if we had had the other requirements for a plant location that we have in Butte. That is a question of power and transportation.

But, in order to protect the investment that we have in furnace plants, it is necessary that we have some idea of where we are going to get our rock in the future.

We hope that the deposits we now have will turn out to have enough high-grade rock to blend with some of the low-grade rock so we can keep on mining and use up all the phosphate that we have in any of these deposits. We are never sure, of course, until the mine is developed.

With our maiden rock mine, the first mine, we know what we have. That rock will fairly soon be exhausted. With the second mine, we still do not know what we have. We know we have a lot of low-grade

rock. Whether there is enough high-grade material in there to permit using all the low-grade rock we do not know, but we doubt it.

When we look for those properties we have our geologists travel around the country, and they look at the outcrops on top of the mountains, and if they find something that looks reasonable and appears to be relatively free from fault, then we dig a trench to get away from the overburden that has fallen down there until we get down to the actual deposit where we can get some idea of what is in the deposit. But we know only what the deposit consists of at that particular point, because these deposits change. As you go into the mountain, the veins may taper down or they may spread out. The high-grade rock may increase in thickness, it may pinch out entirely.

So there is a long period of development, a period of years, before we really know what we have.

We have other properties in view that we would like to work on, but we will soon be up to the 5,000-acre limitation. Maybe we will not need any more than 5,000 for several years, but one thing we do not want to happen is that we be required to relinquish claims or leases on which we have done some of the mining in order to get new properties to work on. There is a lot of low-grade rock in these mines, as I have said. There is a possibility that some day the amount of high-grade rock which can be blended with the low-grade will be too little to use it. If we cannot find enough high-grade rock in our 5,000 acres when we acquire them, we may have to drop some of this low-grade material and go into new territory. That, of course, means a great loss of money because of the tremendous expense in developing the mine. It means an economic loss to the country, because we have some phosphate deposits which might otherwise be utilized and which would have to be abandoned.

That, Mr. Chairman, is my story.

(The prepared statement of Mr. Gillet follows:)

STATEMENT OF VICTOR CHEMICAL WORKS

My name is James M. Gillet. I am assistant to the president of Victor Chemical Works. Victor Chemical Works is an Illinois corporation with headquarters in Chicago and manufacturing plants in Illinois, Pennsylvania, Florida, Tennessee, Montana, and California. Our principal business is the recovery of phosphorus from phosphate rock, and converting that phosphorus into some 150 different phosphorus-containing chemicals. These chemicals in turn are supplied to consumers in every major industry operated in this country, for purposes which vary all the way from the manufacture of foods such as evaporated milk and soft drinks, to the rustproofing of steel and the manufacture of mine explosives.

Victor has three plants in which phosphate rock is fed to electric furnaces to liberate and recover elemental phosphorus. One of these plants is in Florida, another in Tennessee, and the third at Silver Bow, Mont., 9 miles west of Butte.

Phosphorus furnace plants, unlike many other types of manufacturing facilities, are of value only for processing phosphate rock. They cannot easily be converted to the manufacture of other products. The abandonment of one of these plants, therefore, would entail a complete loss except for some electrical equipment which might possibly be salvaged.

Because of the large volume of raw materials required for the operation of these plants, it is necessary that they be located close to supplies of phosphate rock; otherwise the high cost of freight would make their operation uneconomic.

It will be seen, therefore, that to protect his investment, a manufacturer must be reasonably sure of a continuing supply of phosphate rock for a long enough period to make his investment pay out.

The company owns phosphate rock properties in fee simple in both Florida and Tennessee. The company's operations in Montana, however, did not begin

until after the Government had reserved the phosphate-bearing lands on the public domain. It was unable, therefore, to purchase outright and hold for future development, any properties in the western phosphate regions within shipping distance. In this respect our position is different from that of some other companies interested in phosphates, who acquired their phosphate properties in the West before purchase of such properties was forbidden.

The present operations of Victor's Silver Bow, Mont., plant are dependent upon the production of phosphate rock from properties which the company has leased from the Federal Government. It has at present 4 properties under lease with a total of something less than 5,000 acres. Of this area, however, leases on 1,243 acres have not become effective because the Government has not yet surveyed them, and the leases cannot be finalized until the survey has been made. The leases on these 2 properties were granted 16 months and 18 months ago, respectively.

The mining of phosphate rock from the types of formations that exist in Montana is a highly uncertain enterprise. The amount and quality of rock in a deposit can be only guessed at from examination of the outcrops. What appears to be a very desirable deposit may turn out to be something quite different when development tunnels are driven into the mountain, and it is only after large amounts of time and money have been spent on this development work that the lessee knows definitely what quantity and type of phosphate rock can be produced.

Development considerably ahead of actual mining, therefore, is necessary to insure a steady supply of usable raw material for the phosphorus furnaces.

Unfortunately, all of the rock in a deposit is not necessarily of a quality that can be used by itself. Some of it must be enriched by the addition of higher grade rock from other deposits. If the phosphorus manufacturer therefore is dependent upon a limited number of properties, he may find it extremely difficult to utilize all of the rock which one property can produce, because of a lack of rock of different quality required to bring it up to furnace grade. With the limitation of leases to a total of 5,120 acres, it may be necessary to abandon some leases which still contain substantial quantities of usable rock in order that other deposits may be acquired that are of higher grade.

Under present law, it is possible for 1 operator to have a total of 10,240 acres under lease if they lie in 2 States. Because of the high cost of freight, this discriminates in favor of those lessees whose plants are located close to State borders, and places at a disadvantage those lessees, who like Victor, located their plants at interior points.

When Victor undertook to manufacture phosphorus in Montana it believed that the deposits of phosphate rock were of a vast extent and that leases covering 5,120 acres should provide adequate deposits for development considerably ahead of manufacturing requirements. After 5 years of mining in this area, however, it realized that for economical mining operations and for effective use of the company's Montana plant, the limited total of 5,120 acres under lease may be inadequate. The location of the plant is sufficiently far from the border of neighboring States to make it uneconomical to carry on mining in two different States and thus avoid the artificial limitation fixed by the present law.

Victor Chemical Works, therefore, endorses the purpose of H. R. 8394 and urges that it be passed.

JAMES M. GILLET.

Mr. ROGERS. Thank you, sir.

The Chair will recognize Mr. Aspinall, the gentleman from Colorado.

Mr. ASPINALL. Mr. Chairman, I think the gentleman's last statement is the first constructive statement that has been made in favor of any immediate need of action on this problem at this time. So far there has been nothing presented here, at least that I can find out, that anyone has anywhere near approached the possibilities of present development. Even Victor Chemical Co., of course, have 1,240 some acres still to file upon and still to develop. But in the interest of good conservation, the statement that the gentleman made at the close of his remarks is that at least his company is not desirous of surrendering the possession of an area until all of the low-grade is taken out and is an argument in favor of the bill.

Let me ask you this: You said fairly soon you would have one of your properties mined out. Now what do you mean by fairly soon, how many years?

Mr. GILLET. I mean probably within 2 or 3 years.

Mr. ASPINALL. Two or three years?

Mr. GILLET. Yes.

Mr. ASPINALL. With the properties that you now have in your possession and the properties that you can have as soon as you make your filings on the additional 1,240-some acres which are still open and upon which, I understand, you have not filed, how long can you operate?

Mr. GILLET. It depends, sir; on the quality of the rock that we get.

Mr. ASPINALL. And also the amount of the ore?

Mr. GILLET. Yes; we have certain capacity. We have 50,000-kilowatt furnaces.

Mr. ASPINALL. Do you think that you will be out of ore within the next 10 years?

Mr. GILLET. We hope not, because the amount of——

Mr. ASPINALL. Do you think you will be out of development area within the next 10 years in line with your usual development procedures?

Mr. GILLET. I would say "Yes." I think probably we can keep on working for perhaps 10 years on the properties we have now, developing them. We are going in at 5 levels in 1 place and 2 levels in another. There are large deposits, but we do not know what is inside the mountain.

Mr. ASPINALL. I understand that; but I was thinking about the other proposition, your development work. How soon will you be out of an area in which to develop in order to firm up your reserves or operation following the 10 years?

Mr. GILLET. I do not know that I can answer that, sir.

Mr. ASPINALL. That is all.

Mr. ROGERS. Mr. Dawson.

Mr. DAWSON. What you are saying is that it takes a good deal of capital, does it not, to move into an operation of the type that you have, and without sufficient ore reserves there just is not a justification for the operation that you would undertake; is that right?

Mr. GILLET. That is right. We have a good many million dollars invested in our furnace plant, another million in our beneficiation plant. We have spent over a million dollars developing one mine. That is the mine where the development is just about completed.

Mr. ASPINALL. Will my friend from Utah yield?

Mr. DAWSON. Yes.

Mr. ASPINALL. That goes to the future operations. That does not apply to anybody in the field at the present time.

Mr. DAWSON. Of course, that is the thing that I am concerned about, the future operation. It seems to me that an operation of the type that is required to develop our properties out in the West is going to require considerable capital and considerable outlay. Now, it is true that they do have some reserve acres that they could move on to, according to this report. But, according to the witness, their operation requires different varieties of properties. In other words, he has got to have low-grade ore as well as some high-grade in order to get the proper

mixture, which means he is going to have to have the acreage back of him before he can justify the expenditures required.

Mr. ASPINALL. But you are not arguing for anybody else's operations in the future; you are here in your own interest.

Mr. GILLET. That is right. I am speaking for Victor Chemical Works and telling you what our particular problem is. I do not know the other people's problems as well as I do my own.

I do not know that I made myself clear possibly on the development of these other two leases which we hope to start on. We will start development work on that additional acreage just as soon as the Government finishes its survey.

Mr. ASPINALL. Thank you.

Mr. DAWSON. Perhaps the gentleman from Idaho could elaborate on this a little more than I can, but I know something about the Monsanto chemical operation up near Soda Springs, and I notice, according to the report, that they have total leased acreage of 4,377, and the acres available are 742. With the amount of money that they have spent up there in that operation and the research that I know they are doing, it seems to me that 742 acres is certainly not enough for them to be working on and to justify the expenditure they have made and intend to make in the future.

Mr. GILLET. It depends upon how much phosphate there is on an acre. Some acres have a lot of phosphate and some have very little. So acres is really not the measure of your phosphate reserve. You can have some very nice thick beds you can mine for years on small acreage and get good phosphate if it is there. But if it is not there, you have to have a great many more acres than you do in the rich deposits which have been mined for a long time and which were taken up years ago when the people went in and found the good deposits and acquired them.

Mr. BUDGE. Will the gentleman yield?

Mr. DAWSON. Yes.

Mr. BUDGE. As a matter of fact, that is just what has happened in the phosphate industry; is it not? The old operators have operated on fee lands where they had an underground mining operation, where there were large amounts of high-grade phosphate. We have now the western development where they have high grade and we have low grade, which is the low grade now being utilized in furnace operations. It is a new concept of phosphate mining; is it not?

Mr. GILLET. It is, sir. The mining of low-grade rock, as such, really did not start until we began using it in Tennessee in 1929. We then went in and used material which had been thrown aside by the miners of the past 30 or 40 years.

Mr. BUDGE. In order to be competitive now with the companies who have been mining phosphate on fee land for so many years, you must, of necessity, have much larger acreages than are possible under fee conditions in the West. Is that not true?

Mr. GILLET. To be competitive with other people who have very nice deposits on a small acreage, yes, indeed.

Mr. DAWSON. Is your electrolytic process similar to that used by the Monsanto Co. in Idaho?

Mr. GILLET. Yes, it is.

Mr. DAWSON. That again bears out the point I was making that 742 acres for their type of operation is not very much reserve.

Mr. GILLET. You cannot see very far into the future with that acreage.

Mr. DAWSON. That is all, Mr. Chairman.

Mr. ROGERS. Mr. Metcalf.

Mr. METCALF. I have no questions, except to compliment the gentleman for a very illuminating and constructive statement, descriptive of the needs of our Montana mining industry as far as phosphate is concerned.

Mr. GILLET. Thank you very much.

If I may, I would like to leave a statement, Mr. Chairman, supplementing what I said.

Mr. ROGERS. That is fine. Without objection, it will be entered into the record following the oral presentation.

Are there other questions?

Mr. YOUNG. Mr. Chairman?

Mr. ROGERS. Mr. Young.

Mr. YOUNG. How many years reserves do you think a phosphate company should have under its own control?

Mr. GILLET. You ought to be able to run your plant 30 or 40 years in order to make it pay out. It would be very nice if when you built a plant you were sure you had enough raw materials to keep it operating properly and effectively for a period of, say, 30 years to get your money out of it. While you do depreciate a plant, you also have to make repairs, you have to keep putting money back into it, and it takes a long time to get your money back from a manufacturing plant in these days.

Mr. YOUNG. Do you think 10,240 acres, or whatever the figure is that woulld be allowed by this amendment, would suffice for that?

Mr. GILLET. It would if there was a lot of phosphate on those acres. It all depends, sir, on the amount of phosphate there is in the land. In our Montana area, at least, that is anybody's guess. We have made some good guesses and we have made some poor ones.

Mr. YOUNG. Maybe this 10,240 is not enough. Would you advocate larger acreage than that?

Mr. GILLET. It might turn out to be so. It might be that 5,000 to 6,000 acres would take care of us for a long time, at least long enough so we could mine out all of the one lease and drop it and take another one to take its place.

Mr. YOUNG. How long are these leases for ordinarily?

Mr. GILLET. As far as I know for so long as you are operating the property.

Mr. YOUNG. As long as you continue to make your payments?

Mr. GILLET. Yes, sir; and as soon as you are confident you cannot get any more out of it you drop the lease.

Mr. YOUNG. If a subsidiary of your corporation obtained a lease, would that be in violation of the law?

Mr. GILLET. I do not know. I was wondering about that. But it seems to me if it is proper to do those things through subterfuge, it ought to be proper to do it directly.

Mr. YOUNG. You do not know of any cases where subsidiaries or partnerships, say, of the corporation or some other corporation have done that?

Mr. GILLET. I do not know of any such. I was thinking about that this morning and wondering whether it might be possible to set up a dummy corporation to take some of these leases.

Mr. YOUNG. That puzzles me, too. I thought if it were a convenient loophole or subterfuge there would not be much purpose in supporting this legislation, because there are hundreds and hundreds of mining corporations in my part of the country, and I presume throughout the West, which certainly would offer a convenient way of getting the land.

That is all the questions I have, Mr. Chairman.

Mr. ROGERS. Mr. Budge.

Mr. BUDGE. Do you feel that the removal of this acreage limitation within the State boundary would encourage your company to expand?

Mr. GILLET. The expansion, of course, will depend upon the amount of phosphorus that we can use and sell. It will depend upon the development of the market in the West.

Mr. BUDGE. In your long-range planning, do you feel that the removal would be of assistance in the long-range planning on whether you will or will not expand your present operations?

Mr. GILLET. It certainly will have something to do with any plans we make to expand our operations. If we wanted to put in another furnace there, I am very sure we would take a long look at the reserves that we have and the amount that would be available to us.

Mr. BUDGE. Roughly, how much does it cost you to install one furnace of the type you operate?

Mr. GILLET. We had certificate of necessity covering 1 furnace, and I believe the certificate was for $5 million.

Mr. BUDGE. That would be a rough average of what it costs to install one furnace?

Mr. GILLET. There are a lot of different things. One is the cost of foundation, and the matter of bringing in your power, powerlines, and so forth. That is more than we spend in some other places. Of course, we did not build them in other places at the same time. I would not say that $5 million was the cost of a furnace.

Mr. BUDGE. How many kilowatts does it take to operate one of these electrolytic furnaces?

Mr. GILLET. Our 2 furnaces at Silver Bow use 25,000 kilowatts each.

Mr. BUDGE. That is as much as a small-sized city would use?

Mr. GILLET. Yes, sir.

Mr. BUDGE. That is all, Mr. Chairman.

Mr. ROGERS. Mr. Chenoweth?

Mr. CHENOWETH. No questions.

Mr. ROGERS. Mr. Utt?

Mr. UTT. No questions.

Mr. ROGERS. Mr. Gillet, I have just a few questions.

When did your company go into this type of operation, how long ago, in this area?

Mr. GILLET. In this area?

Mr. ROGERS. Yes.

Mr. GILLET. Our first furnace went into operation in 1952.

Mr. ROGERS. In 1952?

Mr. GILLET. Yes, sir.

Mr. ROGERS. That was at the time when you knew how many Federal acres would be available to you?

Mr. GILLET. Yes, sir.

Mr. ROGERS. And I presume your company is a pretty sound business operation and they anticipated what their needs would be and what their resources would be, did they not, when they moved into this business?

Mr. GILLET. They did.

Mr. ROGERS. Did you anticipate at that time requesting additional acreage from the Federal Government?

Mr. GILLET. I will tell you, this first mine we took over was one which was partly developed. The adit had gone in 2,000 feet and they had a certain grade of rock and certain average thickness, and that looked pretty good. We thought that that was probably representative of the rock in that particular area. I am sorry to say when we got past that 2,000 feet we never again encountered the same average grade of rock. It just did not happen.

Mr. ROGERS. In other words, all the good apples were on top of the basket?

Mr. GILLET. All the good apples were on top of the basket. That is right. We hope we will find something like that again.

Mr. ROGERS. More good apples?

Mr. GILLET. More good apples; yes.

Mr. ROGERS. When was it discovered that you had run into this sort of situation, in your earlier operations or in 1953 or 1954?

Mr. GILLET. As soon as we began further development of the mine. In the meantime, though, we were acquiring a site and starting the plant. We knew there was a lot of phosphate rock in Montana. The Geological Survey told us there was a great deal of it, a great deal of it in that general area, and if this particular mine did not pay out, why, there were other places where we could go. You can always drop leases.

Mr. ROGERS. When did your company first contemplate that the suggestion should be made to the Department of the Interior to request an expansion insofar as the Federal acreage available?

Mr. GILLET. Within the last couple of years we have begun to realize that we need other sources of rock than those properties we now have.

Mr. ROGERS. Was that because of an expanding market, Mr. Gillet, or because of the depletion of your present holdings?

Mr. GILLET. Because of the condition of our present holdings.

Mr. ROGERS. It was not the expansion of the market?

Mr. GILLET. No, sir.

Mr. ROGERS. How many years do you have now in reserve insofar as your present operations are concerned?

Mr. GILLET. That would be a pure guess, Mr. Chairman. I do not know.

Mr. ROGERS. You mean that you have not projected it out either on an acreage or a ton basis?

Mr. GILLET. No, sir.

Mr. ROGERS. How many tons do you use a year?

Mr. GILLET. If you figure the furnaces, the 2 of them together, are rated to produce about 28,000 tons of phosphorus a year, the rock that goes into the furnace that is the final blend will have roughly 10 percent phosphorus. So that would mean 280,000 tons a year of average grade.

Mr. ROGERS. That is for one furnace?

Mr. GILLET. That is for the two furnaces.

Mr. ROGERS. And that is all you are operating?

Mr. GILLET. Yes, sir.

Mr. ROGERS. Are you planning on opening another one or building another one?

Mr. GILLET. We have no definite plans on that at the moment.

Mr. ROGERS. But the 280,000 tons, how many acres does that require for you to provide that amount of rock to supply your 2 furnaces?

Mr. GILLET. I imagine one of our leases would supply the furnaces for perhaps 3 years.

Mr. ROGERS. One of your leases?

Mr. GILLET. Yes.

Mr. ROGERS. How big a lease is that?

Mr. GILLET. Say a lease of 400 or 500 acres.

Mr. ROGERS. And, of course, that is what type of mining?

Mr. GILLET. Tunnel mining.

Mr. ROGERS. Tunnel mining?

Mr. GILLET. Underground.

Mr. ROGERS. Of course, you may run into some more good apples. You hope you do.

Mr. GILLET. We hope we do.

Mr. ROGERS. I believe you said that when you run into this low-grade ore that you considered that acreage on a depleted basis to the extent that you ought to replace it with acreage that has a potential of better rock, but that you will want to keep that acreage that you have listed as depleted insofar as your operations are concerned; is that correct?

Mr. GILLET. Yes, sir.

Mr. ROGERS. And the reason you want to do that, Mr. Gillet, as I understood you, was in order to protect yourselves in the event that the developments should reach the point that you could commingle low-grade and high-grade ore?

Mr. GILLET. That is the necessary thing. If we cannot find some high-grade ore to mingle with a lot of the ore that is in these deposits now, we never can use those deposits. It means we have to be mining from several sources in order to get the blend.

Down in Tennessee where we operate furnaces, we are getting the phosphate rock from all around the area. There are probably 20 or 30 places where the rock is being mined. They bring it into the washing plant, and it is washed down, and it is blended so we can get a satisfactory blend. Mining conditions in Tennessee, of course, are different. They are strip-mining operations, and many of them are on very small acreages. They have 10 or 15 acres that will be mined. We have a variety of sources of the rock, so that we can get a satisfactory blend. In the kind of mining we have to do in Montana that is not possible.

Mr. ROGERS. That is the reason that under the present law you say you do not want to give up acreage in order to get more acreage?

Mr. GILLET. Precisely.

Mr. ROGERS. You want to hold on to what you have?

Mr. GILLET. Precisely, if there is rock there. That has been the experience in Tennessee. I know of some properties in Tennessee that have been mined 4 or 5 times in the last 50 years.

Mr. ROGERS. Let me ask you this insofar as that part of it is concerned: Why would it not be good business for you to go ahead and give up this depleted acreage and get some more acreage that has better potential, because if that other acreage has such low-grade ore nobody else is going to bother, and if you do develop this process you can come back and get that later on?

Mr. GILLET. I know, but you have got millions of dollars of development costs in there.

Mr. ROGERS. You have what?

Mr. GILLET. You have millions of dollars invested in developing of those mines. If they are not kept up, they are going to go to pieces, and you cannot afford to open them again for the type of rock in them.

Mr. ROGERS. But you will keep them open and maintain them?

Mr. GILLET. We would expect to maintain them and kep them open just as long as there is a possibility we can get anything out of them that is usable.

Mr. ROGERS. I believe that is all I have.

Are there any other questions?

Mr. BUDGE. Mr. Chairman?

Mr. ROGERS. Mr. Budge.

Mr. BUDGE. Actually, if you were forced to give up these lands that you have already mined when there is remaining rock it is less economical to mine, you would be doing what some of the members of the committee, including myself, have been concerned about—you would be stripping the cream and leaving mineable rock there; would you not?

Mr. GILLET. That is true.

Mr. BUDGE. Whereas, if the acreages which you could hold within one State under Government lease were enlarged, that would not be necessary for you to do; would it?

Mr. GILLET. That is correct.

Mr. BUDGE. Thank you.

Mr. ROGERS. One other question along that line. If we carry this out to its logical conclusion, you are all going to be back here in 5 or 10 years wanting to double this thing again.

Mr. GILLET. I hope that business will be so good we can do that.

Mr. ROGERS. Do you think there is any possibility of that?

Mr. GILLET. I cannot forecast that far.

Mr. ROGERS. Here is one other thing that I would like to have, Mr. Gillet, if you could get it for us and furnish to the committee, because I think it is very important, and that is the reserves that your company now takes the position that they hold, both as to acreage, as to tons, and as to the years that they claim that their present acreage and tonnage they know of will supply them.

Mr. GILLET. I will be glad to get the best information we have on it.

Mr. ROGERS. I think it is highly essential for the record. It is important.

Mr. GILLET. Yes, sir.

Mr. ROGERS. I believe that is all Thank you very much, Mr. Gillet, for your very interesting testimony.

Mr. GILLET. Thank you.

Mr. ROGERS. The Chair will recognize Mr. Budge for an observation.

Mr. BUDGE. Mr. Chairman, I notice that Mr. Turner, who is in the Department of the Interior, the conservation officer, I believe, in the Geodetic Survey or Geological Survey, I am not sure which, is in the room, and I would like an expression from him on this conservation question which has been raised as to whether he and the agency which he represents were in accord and are now in accord with the report as it was submitted by the Department of the Interior.

Were you consulted on this matter?

STATEMENT OF J. D. TURNER, MINING ENGINEER, MINING BRANCH, GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR

Mr. TURNER. Yes, sir; we were some time ago, and as far as I know we are still in accord on it.

Mr. BUDGE. Would you identify yourself for the reporter, your name and your title?

Mr. TURNER. J. D. Turner, mining engineer, Mining Branch, Geological Survey.

Mr. BUDGE. You are the conservation officer in the Geological Survey of the Department of the Interior?

Mr. TURNER. For the Mining Branch.

Mr. BUDGE. For the Mining Branch?

Mr. TURNER. Yes, sir.

Mr. BUDGE. Your section was consulted with reference to this report as it was filed with the committee, and you are in accord with the report; is that correct?

Mr. TURNER. Yes, sir.

Mr. BUDGE. Thank you.

Mr. DAWSON. One more question. You said some time ago you were consulted on it. Was that at the time the report was promulgated, which would be September of 1955?

Mr. TURNER. I do not remember the date, but it runs, according to memory, about that time.

Mr. DAWSON. And you have not changed your views since that time?

Mr. TURNER. No, sir.

Mr. ROGERS. How long have you been down there, Mr. Turner?

Mr. TURNER. About 2 years.

Mr. ROGERS. Had you made any recommendation that this action be taken prior to the time this suggestion was made and was presented to you?

Mr. TURNER. No, sir; I think not.

Mr. ROGERS. Thank you.

The Chair will now recognize E. J. Putzell, who is general counsel and secretary of the Monsanto Chemical Co.

Will you come forward and identify yourself, and we will be glad to hear you.

STATEMENT OF EDWIN J. PUTZELL, JR., SECRETARY, MONSANTO CHEMICAL CO.

Mr. PUTZELL. My name is Edwin J. Putzell, Jr. I am secretary of Monsanto Chemical Co. which has phosphate mining operations and a large electric furnace elemental phosphorus plant at Soda Springs, Idaho.

I appear today in support of H. R. 8394, a bill to eliminate State line restrictions on the holdings of phosphate leases on public lands but which does not in any way increase the acreage or the reserves that a lessee may obtain from the Federal Government.

Mr. Chairman, this statement was prepared prior to yesterday's hearing, and with your leave, sir, after finishing it, I would like to make a few comments with respect to some of the testimony given yesterday before any questions you care to ask.

Mr. ROGERS. That will be fine. As a matter of fact, you can insert any comments you wish in the statement. If the statement is going to be read by itself without any outside material, it will be fine, or if you wish to insert your outside material in the statement, you may.

Mr. PUTZELL. I think it might be in the interest of time if I added at the end, sir.

Mr. ROGERS. That will be fine.

Mr. PUTZELL. As you know, and as you have heard from quite a few men now, present law provides that a Federal phosphate lessee may lease up to 5,120 acres in one State and a total of 10,240 acres in all States. We shall explain why, in our judgment, the 5,120 acres per State restriction should be eliminated.

H. R. 8394 should be approved for three basic reasons:

1. State lines are simply political boundaries and have absolutely no relation to phosphate deposits and their economic development.

2. Western phosphate deposits are tremendously large, but their efficient development by modern, high-cost, large-volume plants will be retarded by failure to adopt H. R. 8394, in our judgment. The present 5,120 acres per State restriction, together with the geography of the western reserves, hampers economic development and retards conservation of the deposits on Federal lands.

3. Because of substantially greater distances from markets, western phosphate is at a very real competitive disadvantage with Florida, the largest producer. H. R. 8394 will help the West to become more competitive.

As you know, there are two general uses of phosphate ore. One is in fertilizer, and the other in industrial chemicals. Most fertilizers are produced by acid treatment of high-grade phosphate rock. On the other hand, most industrial chemicals, and a growing quantity of fertilizer, are produced from elemental phosphorus obtained by the smelting of ore in large electric furnaces. Both of these routes utilize the same phosphate ore, although the electric furnace industry is able to use lower grade ore, as you just heard from Mr. Gillet.

My company takes some pride in the fact that we designed and built the first electric furnace producing elemental phosphorus, we believe. We have been in this business a long, long time, and the comments I would like to make today are concerned with the elemental phosphorus produced from electric furnaces.

Western deposits are very large. They cover approximately 135,000 square miles. But despite what you may have been told here, the full extent of the deposits is not known, as only part of the area has been mapped geologically. Since 1947 the United States Geological Survey has been studying the phosphate in the area and from time to time has announced new discoveries. Quite recently it reported that 75 miles of newly discovered outcrop had been located in Nevada.

Attached is a map of the outcrops of western phosphate deposits traced from maps published by the United States Geological Survey in 1952 and 1953. The outcrops showing on the map by no means represent all the phosphate, because the bed dips underground for great distances. But the known outcrops, as indicated on the map, convey some idea of the vast extent of the ore. There are approximately 2,700 known miles of phosphate cropping out on the surface; more will be added as the area is more completely mapped. The Geological Survey estimates that under present conditions there are in this western area 3.3 billion tons of marketable phosphate ore, with an additional reserve of 24 billion tons minable under changed conditions.

The longest dimension across the phosphate area is an approximate north-south line extending from eastern Utah to western Montana. This distance is about 500 miles. Yellow circles on the attached map indicate general areas where phosphate is mined or is being seriously considered for operations. The purpose of indicating these active areas to you is to show that the phosphate bed is of commercial interest throughout its length.

In 1908 the importance of the western phosphate was first generally recognized, and the phosphate areas were withdrawn from private ownership by the Federal Government. Some phosphate land had already passed into private hands, but the amount was insignificant compared to the remainder. We understand the original withdrawal was made on the assumption that phosphate deposits were relatively limited in extent. Subsequent geological work has shown the bed to be of such great extent that it appears probable that, had this been known originally, there would not have been a withdrawal in the first place. In 1920 Congress passed the Mineral Leasing Act, which put under permanent Federal ownership and administration western phosphate, oil and gas, oil shale, coal, potash, and sodium minerals.

It is interesting here to note, I believe, that despite the importance of phosphorus in our economy, it is not on the list of strategic minerals which the Government promulgates, and I dare say that is because of the extent of the reserves which this country has.

In efficiently administering the use of these minerals, Government agencies have necessarily had to increase from time to time limitations on acreage that could be held by one lessee. This was to provide the reserves needed for the increasing production requirements of modern industry, faced with larger and increasingly costly plant installations. Increased acreage has also been necessary, in order to permit larger volume, less costly operations with their consequent lower unit production costs.

When the Minerals Leasing Act was passed in 1920, the allowable acres of Federal lease in a State were as follows: Potash, 2,560; sodium, 2,560; oil and gas, 1,920; phosphate, 2,560. At the present time a potash lessee is permitted to hold 17,920 acres in one group plus 10,240 acres in another group; a sodium lessee, 15,300 acres in 1 State with no limitation as to the number of States; in oil and gas, a lessee is allowed 46,080 acres in 1 State and no limitation on the number of States in which he may hold leases; a phosphate lessee is allowed only 5,120 acres in 1 State or 10,240 acres in all States.

Since 1920, therefore, the allowable acreage per State has been increased as follows: Potash, elevenfold; sodium, sixfold; oil and gas, twenty-threefold; phosphate, twofold. Thus, the potash and

sodium mineral industries (which have much in common with the phosphate industry) are permitted to have much larger leases than is the phosphate group, in spite of the fact that the known resources of phosphate are many times greater than those of potash or sodium minerals. We are not here, however, suggesting any increase at all in the maximum amount of public acreage which a phosphate lessee may hold; only that the "5,120 acres per State" restriction be eliminated.

Real economic and geographic factors govern the development of western phosphate ore—especially the lower grade ore used by electric furnaces. Our people estimate that any furnace plant such as ours at Soda Springs must have its supply of reserves within 30 to 35 miles of the furnace plant if it is to operate economically and efficiently. This is due to the fact that one of the important factors controlling the use of ore is its delivered cost to the processing plant. A major item in such cost is the expense of transporting from mine to plant. Therefore, an electric furnace must have access to ore reserves within a relatively short radius, without regard to State lines. Formations of ore in the ground know no State boundaries; nor in our judgment should Federal laws designed to promote their efficient development and conservation in the national interest be concerned with State lines.

In Monsanto's Idaho operation we have invested well in excess of $10 million. The high cost of present-day western industrial phosphate operations, as you just heard from Mr. Gillet of Victor (and ours by no means is unique in this regard) requires substantial reserves of ore not only to warrant the initial installation, but to permit future expansion. The high investment cost also, for practical purposes, rules out duplication of plant operations. Expansion at one location is not only important to the industry but also to the general public, because it encourages the use of lower grade ores and makes possible lower prices for the finished product by the more efficient, larger volume operations. This, in turn, is conducive to the proper development of natural resources and expanded uses for phosphate.

At the outset I referred to Florida as the largest phosphate State. Having about the same size deposits, we believe, as are in the West, it now produces 72 percent of the phosphate used in this country. The western phosphate industry accounts for only 16 percent of the total production. Either Florida or the West can supply our total present usage for an estimated 1,500 years. In order to compete, western operators must have adequate reserves for expansion to take advantage of the resulting lower unit cost of production.

There are two main reasons why western phosphate is not an important factor in the overall economy today. First and most important is its adverse competitive position because of the higher transportation costs to market. Second, the western ores are more costly to mine and to deliver to a treatment plant. Since western phosphate, in order to develop, must compete with Florida, may I point out that operators in the Florida fields, in addition to their favorable transportation and mining costs, are also able to provide adequate reserves for their existing operations and contemplated future expansion. The reserves of each of most of the operators are in the range of 15,000 to 60,000 acres. With most of the good western ore on Federal land, a producer cannot even hope to match such acreage.

Since 1950 the production of western phosphate ore has doubled. Most of this has been due to the new electric furnace industry which, within this period has about doubled its use of ore, not through the building of new plants, but by expanding existing ones. There is definitely a limit to the expansion this industry can achieve under present acreage restrictions, and most particularly under the State-line restriction which H. R. 8394 would remove.

To continue to grow, the western phosphate industry must be able to support modern, high-cost, large-volume installations. Because the ore is, in the main, on public lands and because of their very nature, these plants require adequate Federal leases not only to attract them but to permit continued expansion. Duplication of facilities in different States, as a result of H. R. 8394 not passing, could in our judgment only mean wasteful and unattractive duplication of plants and overhead.

In short, H. R. 8394, by eliminating meaningless State boundary restrictions, will encourage continued growth of the western phosphate industry because it will permit accessible plant reserves justifying expansion.

One more word about the all-important subject of our natural resources. The new western electric furnace phosphate industry, now only 7 years old, accounted for half of the western ore production in 1955. This young industry, of which Monsanto is a part, conserves phosphate resources by using low-grade ore which, prior to electric furnaces, was largely wasted or not developed.

If I may interrupt for just a second, I would like to give you a little experience that we had in this connection just a few years ago.

In 1952 we negotiated with a company which testified here yesterday to buy some furnace grade, that is, this lower-grade ore, which was available at its open pit operation 30 miles from Soda Springs. We held several discussions with that company. We talked about the price and the other terms of getting this rock from them.

In the course of these talks, the man who testified yesterday was asked what he would do with this lower-grade rock if he did not sell it to Monsanto. He replied that he would throw it away as waste as had been previously done through the years and not go to the expense of separating it for stockpiling for future use.

We are informed that he discarded that rock, which we believe would now be lost because it is mixed in with substantial overburden.

Contrast this practice with another company which stockpiled the same quality ores and then sought out an electric furnace operator who could use them.

H. R. 8394, by not restricting Federal leases in one State to 5,120 acres, will make possible the greater use of such low-grade ores within the economic mining area of the furnaces. The bill will therefore encourage the conservation of phosphate—an important natural resource. Monsanto's experience shows that the Federal restriction to 5,120 acres does not provide sufficient ore reserves for continued furnace plant expansion. The fact that the deposits are so substantial is by no means a guarantee that they will be properly developed; and unless advantage is taken of all factors which will make them competitive their ultimate development can be indefinitely postponed.

As you know, the Bureau of Land Management of the Department of the Interior, which supervises Federal phosphate leases, has testi-

fied before this committee in favor of H. R. 8394. The Bureau's support of the bill is based upon intimate knowledge of the reserves and the requirements of modern industry for developing them efficiently.

Also, last November the Western Governors Mining Advisory Council, in their report, A Proposed National Minerals Policy, made the following statement:

> The western governors urge the Department of the Interior to reappraise the maximum acreage limitations presently existing on the leasing of Federal mineral lands withdrawn from location and increase the acreage to meet the requirements of modern mining and refining needs. Illustrative of such needs is phosphate.

It seems strange to us, Mr. Chairman, that the Western Governors Conference, the American Mining Congress, the Montana Mining Association, the Utah Mining Association, the Colorado Mining Association, the Nevada Mining Association, the New Mexico Mining Assotiation, and the Idaho Mining Association, as well as the many companies that have made known their views that this bill is, in their judgment, advisable and necessary, is to be contrasted with, as we understand it, only two companies who have testified or plan to testify in opposition to the bill, one of which companies is owned 50 percent by the other.

Monsanto's sincere request is that you take a reasonable step in that direction mentioned by the Western Governors Conference by reporting favorably H. R. 8394, a bill which does not increase a Federal lessee's holdings but which, by removing State-line limitations, makes possible the economic and efficient development of reserves in a relatively small accessible area around an electric furnace elemental phosphorous plant.

Mr. ROGERS. Thank you, sir, for a very interesting statement and the maps that you have prepared, which will be most helpful.

The Chair will now recognize Mr. Dawson.

Mr. DAWSON. Just one comment, Mr. Putzell. In the event that legislation of this type were not passed, would it not be quite likely that some of these larger companies might be forced to deal with some of their friends to go out and get this extra acreage in their name, people they are friendly with, we will say, and thereby circumvent the law and be able to get this additional acreage in order to exist?

Mr. PUTZELL. Well, sir, that is probably the only way out. It is estimated—and, Mr. Chairman, I think that you will be interested in this because I believe you asked a question along this line a little earlier—according to our best estimates, and I think it is that of the industry, there will be a 50 percent increase in this country's requirements for phosphorus within the next 5 years. If the western industry has only 16 percent of the present phosphorus business of this country, it makes good sense that encouragement should be given to the development of the industry out there.

The present law, as I recall it, says that a lessee cannot directly or indirectly hold more than those amounts which we have been talking about. So the only result is that it cannot set up a subsidiary to hold it. That is a little patent. But it certainly can go to subterfuges if it is going to be reckless and irresponsible.

Mr. DAWSON. We have a 160-acre limitation on certain land holdings under reclamation projects, and we find a man's wife can get 160 acres, his nephew, his cousin, and his cousin's cousin, and even-

tually they have it all built up so they have a pretty good hunk of land when they get through.

Perhaps we have all the loopholes plugged up in this act, but it seems to me if a thing is right, if this acreage is necessary in order to get an efficient operation, we certainly should not lay the groundwork for anybody to attempt to get around the intent of the law.

That is all, Mr. Chairman.

Mr. ROGERS. Mr. Young.

Mr. YOUNG. Do you know of any subterfuges that are being used now as have been mentioned heretofore?

Mr. PUTZELL. I am not sufficiently close to the day-to-day operation out there to have any knowledge on that subject.

Mr. YOUNG. Could two shareholders in Monsanto form another corporation and obtain a lease on some property and effect some sort of negotiation with Monsanto? Would that be in contravention of existing law?

Mr. PUTZELL. I suppose the courts will have the final say on that, but it is a matter of degree, I guess, and a given set of facts.

It is rather clear to me, when the law says one cannot directly or indirectly do something, that if it is so established there was connivance and that company did use another strawman or what have you to acquire leases beyond those permitted the company itself, that it would probably be well beyond the pale.

It is pretty clear to my mind, at least, that any company in which another has a substantial interest is going to have to add its holdings to those of the company holding that interest for these maximum restriction purposes.

Mr. YOUNG. What is the amount of money paid now by the lessees each year for Federal lands? Is it a dollar an acre after a certain number of years?

Mr. PUTZELL. It has been a number of years since I looked at the ones we got. I am not sure whether it is a dollar or not. I do not think it is over that, Mr. Young. It would be a dollar or a little less.

Mr. YOUNG. Has that gone up at all during the past 20 years? Are you familiar with that?

Mr. PUTZELL. I am not familiar with that.

Mr. YOUNG. Do you have any idea what the large operators in Florida, who have reserves of 50,000 and 60,000 acres, as mentioned in your statement, pay for land they lease down in Florida?

Mr. PUTZELL. I can tell you this: That I understand there is still buying and selling of land in Florida and that the prices are considerably beyond any rental that the Government would receive under any Federal lease.

You see, the business of running these electric furnaces, as you were told a moment ago, involves the use of more than just the high quality ore which goes into the fertilizer business. We in Tennessee, where we have a large installation, where we put the first ones up, have to buy rock, and in the course of buying rock we get it all over, including Florida. The economics of it are quite different from what they are in the West. We find that the Florida situation is going to give the western situation a very rough time under the present circumstances.

Mr. YOUNG. That is all the questions I have.

Mr. ROGERS. Mr. Budge.

Mr. BUDGE. I do not believe I have any questions, Mr. Chairman.

Mr. ROGERS. Mr. Utt.

Mr. UTT. No questions.

Mr. ROGERS. Mr. Putzell, with reference to this subterfuge business, Monsanto has not been engaging in any subterfuges, have they?

Mr. PUTZELL. No, sir, and it is not going to. That is why we are here today.

Mr. ROGERS. None of the companies have. As a matter of fact, the situation is such at the present time where none of them are in a shaky position to the extent they would even have to consider subterfuges in order to save their economic life. Is that right?

Mr. PUTZELL. I am not sure I can agree with you on that, Mr. Rogers.

Mr. ROGERS. You think their position is shaky?

Mr. PUTZELL. I think this, sir: that the economics of the electric furnace industry, about which you heard a little bit a moment ago, and on which I would like to comment a little bit further, perhaps, are a little different from what some of our friends out in the West who have been doing it by an entirely different process through the years are familiar with.

In fact, one of the things that shocks us is how people can speak with expertness on a business in which they do not participate too heavily.

We have a two-furnace plant out in Idaho. We have spent many, many millions of dollars. As you know, the Federal Government requires you to amortize a big facility of that sort over 30, 35, or even 40 years. Now, if you have to amortize it over a shorter period of time, deplete it or depreciate it over a shorter period of time because you have smaller reserves of raw material for its use, it means that the per pound cost of product coming out of that plant is going to necessarily have to be higher. It is just a matter of arithmetic.

We have not anywhere near 40 years' reserves out there, although that is the basis on which we are depreciating most of our Idaho plant. We haven't got anywhere near the years of reserves that were imputed to us yesterday. Our best estimate, on the basis of today's production out there, Mr. Chairman, is that we have something around 20 years if we are lucky, and if, as Mr. Gillet pointed out, we get the combinations of qualities of ore that we hope and pray that we are going to get.

But with a plant of well in excess of $10 million sitting out there, with a community of Soda Springs very interested in the livelihood of that plant and its success, with long-term power contracts and a lot of other commitments we have got, our concern is substantially that our reserves go beyond what we now have.

Mr. ROGERS. When was that plant built out there?

Mr. PUTZELL. It was built—we started operations, sir, in 1951. We commenced exploring out there in 1949.

Mr. ROGERS. Is it set up for amortization over a 30-year period?

Mr. PUTZELL. As I said a moment ago, most of it is 40 years. You know different units of operations have different periods of depreciation under the Federal law.

Mr. ROGERS. I was wondering whether or not there was any certificate of necessity involved in this that allowed you to amortize faster for tax purposes?

Mr. PUTZELL. No, sir; to the best of my knowledge we have no certificate of necessity.

Mr. DAWSON. Will the chairman yield?

Mr. ROGERS. Yes.

Mr. DAWSON. As I understand, those certificates are only granted for ores that are considered to be vital to the national defense.

Mr. PUTZELL. Or plants which are vital to the defense effort during the Korean period or during the war period. That is correct.

Mr. ROGERS. I believe that is all right now.

Mr. PUTZELL. Mr. Rogers, could I bore you for just a minute longer, sir, on this subject of conservation, because we really believe it is at the heart of this problem.

Mr. ROGERS. Let the Chair make this announcement: We are on a subterfuge right now because we are in session and the House is too.

What I am thinking about is this: We are going to have to continue these hearings tomorrow, and if you would prefer to go into that further tomorrow, you will have a great deal more time to do it.

Mr. PUTZELL. At your pleasure, sir.

Mr. DAWSON. I would just suggest that his statement on this conservation question be made a part of the record because that is very important and certainly a question we have to confront on the floor of the House. I think it would be helpful if he has something for the record.

Mr. ROGERS. It is so ordered, and he will be recognized tomorrow for whatever comments he may want to make on it.

Mr. PUTZELL. All right, sir; I will be here in the morning.

Mr. ROGERS. Fine. The committee will stand adjourned until 10 o'clock in the morning.

(Whereupon, at 12:10 p. m., the subcommittee adjourned, to reconvene at 10 a. m., Friday, May 25, 1956.)

PHOSPHATE

FRIDAY, MAY 25, 1956

HOUSE OF REPRRESENTATIVES,
SUBCOMMITTEE ON MINES AND MINING OF THE
COMMITTEE ON INTERIOR AND INSULAR AFFAIRS,
Washington, D. C.

The subcommittee met, pursuant to recess, at 10:10 a. m., in the committee room, New House Office Building, Hon. Walter Rogers (chairman of the subcommittee) presiding.

Mr. ROGERS. The Subcommittee on Mines and Mining will come to order for the further consideration of H. R. 8394.

Mr. Putzell was on the stand yesterday at the time of the adjournment. If you would like, Mr. Putzell, you may take the witness chair at this time and continue your discussion in keeping with what you suggested yesterday.

STATEMENT OF EDWIN J. PUTZELL, JR., SECRETARY, MONSANTO CHEMICAL CO.—Resumed

Mr. PUTZELL. Thank you, Mr. Chairman.

I believe, Mr. Chairman, that I had asked for permission to make a couple of statements on the subject of conservation, which seems to us to be pretty basic to this whole thing.

I would like first, if I may, to direct the committee's attention to a reference in a recent publication of the Bureau of Mines entitled "Phosphate Rock."

The paragraph I have in mind reads this way, or at least contains substantially this material:

> The lack of adequate beneficiation technique for some types of rock is one of the factors that retards growth of the western phosphate industry. Whereas some phosphatic shales are being used in producing elemental phosphorus in electric furnaces, western fertilizer operations are confined to the use of higher grade beds, with little or no regard to the potential value of the lower grade phosphate strata. Improvements in beneficiation techniques or further expansion of the thermal reduction processes may allow more complete utilization of the beds, thus conserving reserves.

It then goes on to say that economical beneficiation methods would make it possible to mine a greater portion of the phosphoria formation.

You will recall we were talking about the use of lower-grade ores in the electric furnace. We have been operating in Idaho since 1952 and we have 4 years of experience on which to go. Testimony in opposition to this bill, you will recall, dealt with the use of the higher quality rock, which has a content of P_2O_5 of 30.5 to approximately 32 percent. That is the high-grade stuff that goes into fertilizer.

In our furnaces in Soda Springs, Idaho, during this period of 4 years we have used only 16 percent of the high grade, and we have used the balance of 84 percent of what is called the furnace grade, which is from 24 percent of P_2O_5 content on down to 16 percent.

I would like to emphasize that, sir, because it is in line with what the Bureau of Mines has been talking about, namely, the utilization of the low grade as being in support of conservation.

We also, I think, can take credit for the fact that we are using the lowest grade ore that is now being used in the West in our furnaces, and our constant effort is to continue to use lower and lower grade stuff, because, obviously, there is more of it out there, and it is cheaper material.

Yesterday I was asked a question about whether or not there was a certificate of necessity in connection with our Soda Springs plant, and I said to the best of my knowledge there was none. I checked into it at our office here last night, and I find I was wrong. About one-fifth of our plant out there is on a 20-year depreciation basis under a certificate. About one-fifth of the plant; the other four-fifths is not.

On the subject of conservation once more, sir, if I may, I would like to make one other comment.

There was reference to the fact that open pit miners of phosphate ore "high grade" the phosphate, that is, take out only the good stuff, the high quality stuff, and throw away the rest. That is not in accordance with our practice and our experience out there. We are mining in Idaho today 100 percent of the phosphate ore present in the ground as it comes out, high and low quality, all the way down the line. That is more than any underground mining operation in the West, to our knowledge. As I said a moment ago, we also recover and use the lowest grade ores mined in the West today.

In our judgment, therefore, we are furthering the practice of conservation.

We have detected a feeling in going through the record of the first day's hearing that we are the bad boys of this thing. We have been called the proponents, we have been called protagonists, we have been apparently accused of being the people who have some hidden reason for recommending this bill. Actually, I do not think we are nearly as bad as we have been made out to be. In fact, I do not think we are bad at all. If there is any allegation with respect to us that has not come out on to the surface, sir, I would appreciate it being brought out.

The feeling comes to one, as he reads the record, that we are attempting, and those who are in favor of this bill are attempting, to build reserves which they do not intend to use. As far as Monsanto is concerned, that is not the case, and I want to state that categorically.

In the first place, we are in the chemical business, and everybody knows that the chemical business is what is called a growth industry. Our requirement for money and more manpower substantially exceed what is available.

The chemical industry, as the record shows, is doubling approximately every 5 years. We do not have resources now, financial, manpower resources, adequate to do other things that we are very much interested in. It stands to reason that we are not in any way in-

terested in putting time and money into the acquisition of something we do no plan to use.

Statement was made the other day that in the hearings in 1948 in Pocatello, when the maximums were increased to the present level of 5,120 acres, that that decision to increase it from the previous maximum had no influence on the industry out West and that, in the judgment of the witness testifying, the passage of this bill would have no influence.

Our company was definitely interested in and watched the progress of those hearings and what resulted from it. I think you will find that following those hearings and growing out of what subsequently transpired, we moved into the West.

We have just completed the installation of a sixth electric furnace in the State of Tennessee in one place, 6 furnaces in 1 place. The main reason that was done is because of the fact that in the State of Tennessee there are not the same problems with respect to getting reserves for high-cost plants, plants costing millions of dollars, as there are in the West under the present law.

We are now in the process of further expanding the Tennessee plant. I would like to have it in the record that Monsanto's further expansion in the West is very seriously tied in with the availability of reserves to it.

We, in our view, can only mine rock economically within an area, as I said yesterday, of 30 to 35 miles of our plant.

It was stated sometime back, on Wednesday, that you can only haul low grade ore 15 miles. That is not our experience; ours is 30 miles. That is what we are doing. In fact, right now most of our reserve tonnage 30 to 35 miles from Soda Springs. But there is an economic limit within which you can haul this stuff, as you men know.

Because of the geography of the area in which we are located, because of the power resources, because of the water which is necessary, and all the other factors—and there are many—which go to make a decision as to where you locate a plant, one of the most important being the reserve picture, of course, any expansion of Monsanto in the West in the future is going to be very definitely tied into available reserves.

So, just to come then back to what I said at the outset, we were interested in the increase in 1948, we are interested now, and we are interested for the very clear reason that the reserves for a plant with a 40-year life have to be adequate in order to induce us to put more of such installations in the West.

On the business of length of reserves, Mr. Chairman, I noticed in the record statements about 3,000 acres of reserves being blocked out and apparently adequate for 10 years of operations. You will recall that yesterday I said that Monsanto's reserves, according to our best estimate—and we spend a lot of time and money trying to figure it out—is 20 years, based on the present properties that we have, and that makes no allowance for the expansion which we hope will come about to meet the 50 percent increase of requirements of phosphorus in this country in the next 5 years. We believe it is coming, and it is a question of where the expansion is going to be—in the West or in Tennessee and Florida. So that our reserves, with a plant the size we have, we feel are below the safe line, and if we were to put any

more plants out there, or if we were to increase the capacity of the present plant, which we are trying to do, it would further hamper us.

You recall yesterday one of the men—I think Mr. Gillet of Victor, if I recall rightly—said they are using something like 25,000 kilowatts per furnace in the West. Our furnaces now use 30,000, and we are striving valiantly right now to increase them substantially beyond that and believe we are going to do it well up over that figure. Every increase in capacity of each of those electric furnaces means an increased requirement in reserves.

I believe that covers what I would like to say.

Mr. ROGERS. Before we go into the questioning period, I think it would be proper for the Chair to make an observation regarding your statement about the company that you represent being considered the bad boy of these hearings. I want the record to show, as far as the Chair knows and the other members of this committee, there certainly has been no such thought in the minds of the committee. As far as I am personally concerned, I know of no reason why Monsanto should be criticized, or not criticized, as far as that is concerned, on any of these points. My experience with this particular company has always been that it exercises the highest motives in its operations, and if it has done otherwise, I do not know about it. But I do think it must be remembered that we, as Members of Congress, are dealing with assets belonging to all of the people of the United States. Whether we want to be or whether we do not want to be, we are sitting in a position of public trust as trustees of this property, and I think it is only right that every possible suspicion must be exhausted before we pass any legislation that has to do with the conveyance of the public property over to one individual or one group of individuals.

I just want the record to show that so, if there has been some misunderstanding about it, it would be cleared up.

The Chair recognizes Mr. Aspinall.

Mr. ASPINALL. Is there anything in the record that would lead one to believe that there is any foundation for the statement made by Mr. Putzell about them being considered the bad boy of the industry by anybody on this committee?

Mr. ROGERS. As far as I know, I do not know of any.

Mr. ASPINALL. I do not think so.

Mr. ROGERS. I think it is probably brought up because of some misunderstanding in that respect.

Mr. PUTZELL. In view of what you have said, Mr. Chairman, I hope and know now that we were misinformed.

Mr. ROGERS. The Chair recognizes the gentleman from Colorado, Mr. Aspinall, for any questions.

Mr. ASPINALL. Mr. Putzell, I have a question concerning your remarks about the certificate of necessity, not because of any question I have, but to fill out the record.

You stated it was approximately one-fifth of your investment. What is your total investment?

Mr. PUTZELL. In the neighborhood of $15 million, sir.

Mr. ASPINALL. One-fifth would be, then $3 million to be secured under the provisions of the certificate?

Mr. PUTZELL. It is in that order, Mr. Aspinall.

Mr. ASPINALL. As I see the legislation there are only two matters involved. One is whether or not it is necessary to carry on the busi-

ness operations which you have to increase your holdings by the amount which is suggested by the bill. The other is, what is the necessity of leaving for others certain areas of deposits so that other businesses can enter into the same operation.

One of the things that bothers me is the fact that if you take the amount of land requested, 5,120 acres, and divide that, I think it comes out to 256 40-acre tracts; 256 40-acre tracts extending along an outcropping such as was suggested yesterday, runs for something like 64 miles, or if plotted effectively, it would permit the blocking off of other areas and more than likely would shut out successful operation by individuals in contiguous areas. So it might be a great deal more than the 5,120 acres which would be under the control of the single operator; is that not correct?

Mr. PUTZELL. I am sorry. I cannot go along with all of those thoughts. In the first place, you know, I am sure much better than I, each acre of land does not have the same amount of phosphate ore in it as does the next.

Mr. ASPINALL. In the history of mining that is admitted.

Mr. PUTZELL. I would like to say this: We have approximately 6,500 acres of phosphate lands under lease out in the West today, a total of 6,500 acres, and despite any figures you might have gotten elsewhere, that is what our acreage is. There is some overlapping, I might say, of State and Federal leases. We have both on the same land, and that might account for some of the different figures you have heard about our holdings.

We have spent 3 years and several hundred thousand dollars prospecting those 6,500 acres, and we now come up, to our great dismay, and find that less than 5 percent of that acreage contains usable phosphate rock in our electric furnaces today.

Mr. ASPINALL. Then, of course, the next step you will take, if you are on public land, is that you will release that area which does not have any valuable deposits, and you will immediately request additional area where you can get in and develop ore possibilities.

Mr. PUTZELL. Well, sir, that is right as you say it, but it is not quite that simple. In the first place, when you put big money into something you do not just walk away from it. You hold on to it as long as there is a thread of hope by improvement of your process you can use still lower quality ore or by some other development you can use what you have. You do not just throw away investments.

But, secondly, as you know, the bidding process for Federal leases complicates this thing considerably. I do not know if you want me to go into detail on it, but one does not just pick up land at will. Anytime somebody decides he wants a piece of property out there he thinks has phosphate ore on it, he asks the Government to call it up for bidding. Then there are sealed bids filed by anybody who wants to go in and, of course, the highest bidder gets it.

The bidding has been going up all the time. Just recently San Francisco Chemical bid $75 an acre.

Sometime ago, I remember when we were looking at some lands, to our amazement $240 an acre was bid out in the West.

The Government then is going to give the land to somebody who is the highest bidder on sealed bids.

It happens, and it is not at all unusual, that you could be in an area like we are, within a radius of 30 miles of our plant, which we

consider vital to maintain this big installation—we may give up a piece of property and see within that 30-mile radius another piece we want very much. It is called up for bidding. It is right in the middle of this area we consider valuable, and to our utter amazement someone else gets it when the bids are opened. So there are real hazards in this thing about shifting leases.

Mr. ASPINALL. What will happen if this bill becomes law will be that you will immediately start a program to acquire all the land that is possible for acquirement under the provisions of the bill; is that not correct?

Mr. PUTZELL. No, sir; it is not. We do not now hold the maximum, and we would not then immediately start to do it.

Mr. ASPINALL. What is the reason you are in the West? What particular situation made you decide to go to the West with your operations?

Mr. PUTZELL. There are several reasons, Mr. Aspinall. One is the fact, as I said a moment ago, we have got a huge operation in Tennessee, and we believe that with the growing economy of this country it is wise for us to grow with it in its many areas.

Mr. ASPINALL. The reason you got into Tennessee like you have is because of the proximity of rather reasonable cost power; is that not right?

Mr. PUTZELL. It is a combination of factors. We had to have ore reserves, we had to have power, we had to have water, we had to have people.

Mr. ASPINALL. The same thing is true in the West. And you thought it was a fairly good opportunity because of the pressure of reasonable cost power and the presence of ore and water and other resources.

Now is not it only natural—I am not finding fault. I am not finding fault because I am for good business procedures; is it not only natural to suppose that if a bill like this would go through, a company which is interested in its future would immediately endeavor to secure possession of the best deposits closest to the most reasonable cost power, transportation facilities, and the presence of other resources such as water?

Mr. PUTZELL. Mr. Aspinall, it is reasonable, but we have been out there since 1949, sir, and trying all along with a huge investment to secure the maximum, and we to this day have not been able to satisfy ourselves in 7 years that we can do it with the present maximum. So there are a lot of problems involved.

Let me go back to this Tennessee thing to illustrate. They are not exactly comparable in Tennessee where the lands are owned in fee, as you know. When someone buys ore he only buys the specific deposit, and you can limit, you do limit to the specific deposit of ore that you are buying; the outcrop, the outline of the outcropping can be and is the boundary of what you buy. That is not true when you bid for leases on an acre basis in the West. You may end up with a 40-acre lease that has only 3 or 4 acres that have phosphate in it, and you have got a substantial number without phosphate rock, or such little amount as to make it unprofitable.

Mr. ASPINALL. You can secure 20 acres, can you not?

Mr. PUTZELL. Yes, sir. But I am just using that as an example. The same would be true of a 20-acre lot.

What I am trying to say is, although you have available the maximum, naturally you are trying to get it, just as everybody who has been out there is, it is not always easy to do, and that is why I feel you find most of the companies do not now have the maximum.

Mr. ASPINALL. With your experience in the West and knowing the number of operators, is it your opinion that if this bill should become a law there will be plenty of phosphate bearing land left open in the proximity of reasonable cost power, good transportation facilities, water and other natural resources that are present, to permit people who are not now in the business but who may wish to get into the business to enter into it in the future?

Mr. PUTZELL. The answer is unequivocally yes. In fact, as I said yesterday, sir, nobody knows the present limits of the reserves in the West. We think we do, but, as you know, they are mostly inferred estimates. Nobody knows. But every time the Geological Survey makes a further study they find new areas. More was just announced recently.

We are of the opinion, despite what other people might think, that any body of ore within 30 miles of presently existing railroads or railheads out there or plants are accessible. Our conclusions are that a hundred percent of the material now known out there is available and potentially useful to people like ourselves or newcomers to the area.

You would be interested, sir, probably in the fact that just the other day it was announced that an option on 3,000 acres near Vernal, Utah, was let to one of the old-time operators in the West. It is very low quality stuff. According to our information, it has 20 percent P_2O_5 content in it. That is 125 miles from a railroad, Mr. Aspinall, today, and yet an option has been acquired on it to purchase this privately held property. That indicates that a company that has been in the West 50 years believes it is economically developable or in my judgment they would not have acquired it.

Mr. ASPINALL. Referring to the circulars, and this particular one "Geological Survey, circular 297," just looking at it hurriedly as a layman, the different charts presented, my layman's review of that would lead me to believe that the outcroppings are somewhat limited, and that it would be possible to take over control of all of these now known valuable deposits by a few companies. Most certainly we do not wish to see that happen.

Mr. PUTZELL. I do not either, sir.

I would like to come back to what I said yesterday. This bill, as I understand it, in no way increases the maximums that any lessee can hold. As I understand it, all it does is to eliminate a State-line restriction. The outcroppings are in four States in the West. I do not happen to have the bulletin you have, sir, but I had a map yesterday that was attached to the prepared statement which outlines the area. Did you by any chance see that, sir?

Mr. ASPINALL. I do not know as I saw that one.

Mr. PUTZELL. That covers four States, and my understanding was that this bill was concerned only with the State-line restriction and not the maximum number of acres, to say nothing of the maximum tonnage or reserves in those acres which a lessee was entitled to under Federal law.

Mr. ASPINALL. Now referring to that map, in the State of Wyoming, right in the center of the State is rather an extended reference to outcropping of phosphorus ore.

Mr. PUTZELL. Yes.

Mr. ASPINALL. It would be possible, as suggested—at least it looks to me like it would—for one operator to go in and take all of that or a goodly share of it under the provisions of the proposed bill.

Mr. PUTZELL. I do not know the mileage of that presently known outcropping, nor do I know how much more is around it. But, sir, I did not understand that the Federal Government was as concerned as it may be with respect to holdings in a State. I understood that the problem—I thought I understood that the problem was the maximum acreage that any lessee could have in the West.

Mr. ASPINALL. I think that the only reason, perhaps, that we have it on a State basis is that it divides or makes possible the production by several instead of a few within a State. I was not here when the original bill was passed, as I remember, and I do not know what the philosophy was back of it.

Mr. PUTZELL. As you probably know, potash and sodium are pretty much in the same category, and I believe the original law had the same maximum with respect to each. Now subsequently, legislation with respect to sodium, which is much less available out there than phosphate, so far as we now know, provides for 15,300 acres in one State with no limitation as to the number of States in which it may be held, as I understand it. That is quite a different concept from what we are dealing with here.

Mr. ASPINALL. What is the difference in the cost of production of those minerals?

Mr. PUTZELL. I am not technically informed on that. I just do not know.

Mr. ASPINALL. Do you know why the increase in acreage was permitted? Have you traced back to find out why they raised it from the original authorization to the present authorization?

Mr. PUTZELL. No, sir, but I think I know a little more about the oil end of it because we have recently gotten familiar with the oil business. As you probably know, the acreage for oil leases has been increased on several occasions, and today on oil it is 46,080 acres in 1 State, with no limitation on the number of States.

What happened there is—and we are finding that to our own sad experience—that you run into a lot of dry holes. Like the phosphorus business, every acre you get in the West does not have usable phosphate on it. I would suspect it may be true in case of these other minerals that we are talking about as well, that when you deal with it on an acreage basis rather than a tonnage basis of reserves there has got to be some leeway under the system we are using.

Mr. ASPINALL. I understand that. The only thing that is difficult perhaps for understanding is the fact that you can release whenever you wish to, whenever you find the values are not there, and you can make application for new values.

I think that is all I have, Mr. Chairman.

Mr. ROGERS. Mr. Budge.

Mr. BUDGE. Mr. Putzell, I wish you would explain a little more in detail the procedure in obtaining a Federal phosphate lease on the public domain, with particular reference to whether it would be pos-

sible for a company to move in and by clever location of the leases preempt other individuals from sharing in subsequent leases.

Mr. PUTZELL. Well, sir, it is very easy to get to that last statement you made. It is very easy to upset something by bidding high on it.

As I mentioned a moment ago, anybody is entirely at liberty to ask the Federal Government to bring up for bidding any piece of property in the public land in the West that he considers ought to be brought up. That could be right within the radius of a plant which is fixed like ours and where we cannot move it.

If you are in the mining operation and can pick up your gear and go from one place to another, that is one thing. But when you have got to service a plant that is tied down to a given site you have got, as I mentioned before, an accessible area in which you have to operate. In our judgment it is 30 to 35 miles in any direction. Then that is, of course, hemmed in by mountains we have down near Soda Springs.

So once a person brings up a piece of Federal land for leasing, it is then submitted to bids, Mr. Budge, and anyone can submit a sealed bid. The Federal Government, as I understand it, lets the property, grants a lease to that person who makes the most attractive bid to the Government.

As I mentioned—you were probably here and heard me say it—we know of situations in recent times when the price bid was completely beyond what had theretofore been known.

Mr. BUDGE. Who makes the geographical determination of the land to be leased in the lease offer?

Mr. PUTZELL. As I understand it, sir, any individual or company can request the Department of the Interior to put up designated areas.

Mr. BUDGE. In 40-acre tracts?

Mr. PUTZELL. Yes, sir; for bidding. It is clear from that if people who study the leases now available—and everybody interested in this business, of course, does—finds that he can frustrate a competitor by bringing up for bidding and then bids a high price on a piece of property which is important to the other fellow, but which for one reason or another he does not then have, then it is quite easy to frustrate the competitor.

Mr. BUDGE. If Monsanto were interested in simply blocking out reserves on 10,240 acres, you could do that in Wyoming or in Nevada or Utah just as well by a combination as you could do it in Idaho; could you not?

Mr. PUTZELL. We could, Mr. Budge. As a matter of fact, by reference to this map that I was just talking about, you will find that as the crow flies we are within less than 35 or 40 miles, I guess, from the State of Wyoming, and just a little more than that from the State of Utah, located as we are at Soda Springs, Idaho. But it happens that there are mountains in the way.

We have one piece of property which is 21 air-miles away from where we are, but it is something almost near 40 by land.

So that the geography of the area has an importance here, too.

Monsanto, the first year it was working out in the West, could have gone and gotten the maximum 10,240 acres. It could do that today, but that would be rather reckless and certainly would not be in the interest of developing the phosphate industry in the West.

Mr. BUDGE. I notice on the exhibit which you attached to your prepared statement yesterday that from the circles indicating the present

operations, the majority of them seem to be near State lines. Is there any explanation to be drawn from the exhibit?

Mr. PUTZELL. I do not know, sir. I am not qualified to say. But with a State-line restriction in the law, it is kind of easy to deduce that might have some little influence on the location. I can state unequivocally it had none in the location of our plant at Soda Springs.

Mr. BUDGE. We had one witness here yesterday describe an operation which was deliberately located right near a State line because of this restriction.

Mr. PUTZELL. It was not our plant.

Mr. BUDGE. We have had testimony before the committee that only approximately 20 percent of the Federal phosphate land in Idaho is of economic interest, and it would be possible for 4 or 5 lessees to entirely control that 20 percent. Do you have any comment on that?

Mr. PUTZELL. Yes, sir; I read that.

I would like to say this: As I mentioned earlier, in our judgment, the economic maximum haulage range for low-grade ore which the electric furnaces are interested in is not 15 miles, as was stated as one of the assumptions on which that conclusion was made, but 30 miles.

In support of that, I would like to say that we are working properties right now out there 25 to 30 miles from our plant. We have built a railroad track or plan on building railroad tracks 30 miles in one direction, and we know of another company that has built such a track and is planning to build another.

On our experience of the range from which these ores can economically be brought to a plant such as ours, we concluded that practically all, that is, 100 percent, and not 20 percent of the presently known deposits on Federal lands in Idaho, can be economically developed at this time by building 30 miles of railroad track on both sides of presently existing public carrier facilities. That is our opinion, sir.

Mr. BUDGE. With reference to your amortization here, you stated that 20 percent of the cost of your plant was being amortized under a certificate of necessity within a 20-year period. Is the balance being amortized on a 40-year or a 50-year period?

Mr. PUTZELL. Approximately 40, Mr. Budge. That is the figure for the rest of it. As you know, there are some essential parts of any operation which deteriorate more rapidly. But, talking about the plant as a whole, under the Federal tax laws 40 years is the basis on which it is amortized.

Mr. BUDGE. It would be your feeling, though, would it not, that good business practice would force you to establish reserves in order to have your reserves adequate up to the point of your amortization period?

Mr. PUTZELL. Yes, sir. In fact, it would be a hardship and a risk not only on us but on the consuming public if it were not.

Mr. BUDGE. I was quite interested in your statement that you felt you had reserves for approximately 20 years, which would be only half of your amortization period. Of course, if you double your operation out there or increase it 50 percent, that throws it even further out of line with regard to amortization period.

Mr. PUTZELL. That is right. I would like to tell you, if I may, Mr. Budge, what our experience has been out there with respect to reserves.

When we decided to build a 1-furnace plant we felt we needed 12 million tons of reserve ore as the satisfactory amount on which to justify building the plant. We worked for 3 years in the process and spent many thousands, several hundred thousand dollars to prove it out. Since that time we have put in a second furnace, and we have increased the capacity of each furnace, as I mentioned earlier. The result is that from an original 40-year reserve life which we had in the ore at the time, we now have available for our presently operating plant out there a 20-year life.

Mr. BUDGE. I would like a little further statement from you with regard to the testimony that it would be possible for 4 or 5 lessees to control all the phosphate on the public domain in Idaho. Do you think that would result from this legislation?

Mr. PUTZELL. I not only do not think so, but in some testimony that was given here the other day more or less the same question was asked. If you will give me just a half a second. Here it is. The question was asked as to whether or not this would result in monopoly—I believe was the word—and the reply was that, "I am sorry if I gave you that impression. I have not tried to make that in my statement or in my discourse on my statement."

In other words, that witness seems to feel, and so do we, that monopoly will not result, and in my judgment 4 or 5 or 6 companies will not control all of the ore out in Idaho if this legislation is adopted.

Mr. BUDGE. Thank you, Mr. Chairman.

Mr. ROGERS. Mr. Metcalf?

Mr. METCALF. No questions.

Mr. ROGERS. Mr. Dawson?

Mr. DAWSON. I have 1 or 2 questions. Mr. Putzell, I believe the interest of the Members of the Congress from the western area is pretty much the same. We want to be sure, for one thing, that no one company is permitted to tie up big acreage and just hold it and keep a monopoly on it.

In the second place, we are very much interested in seeing a real development of these resources. I for one want to express my appreciation to Monsanto for doing that very thing and going out there and building the type of plant that they have at Soda Springs and really developing that area.

Incidentally, I was the author of the bill in the 80th Congress which increased this acreage, but that was done primarily for the benefit of some of my coal people who had a similar problem, and phosphate was added at the request of the Department.

I believe you made the statement that if there was any ulterior motive involved, you would be very anxious to have it brought out.

Mr. PUTZELL. Yes, sir.

Mr. DAWSON. You have also made the statement that it is uneconomic to transport these ores farther than the 30-mile distance. In view of that fact, and in view of the fact that your company is interested primarily in the production end, would there be any advantage to your company in just scattering all over the country and picking up outcroppings wherever you could find them so as to grab up the 10,000 acres in a State regardless of the area that is covered?

Mr. PUTZELL. Obviously it would not. It would be just silly to even try to do it. And almost equally as silly, in my judgment, would be trying to build other electric furnaces in other locations unless the economics could clearly jusify it. As you heard me say a moment ago, we have put many millions of dollars out there. We have now got all kinds of utility facilities and all sorts of services at our plant where, naturally, an expansion of that plant is going to produce cheaper products than by our building a duplicate plant in an adjoining State 30, 50, 60, 70 miles away, with all the duplication of overhead and services and the rest of it which inevitably is going to be reflected in the cost of the product that is run through it.

Mr. DAWSON. In other words, it simply is not to your advantage to go ahead and tie up some acreage from an investment standpoint to keep a competitor out. You would be better off not having it in the beginning, would you not?

Mr. PUTZELL. Sir, if we cannot beat a competitor by our operation and the product we produce, we do not deserve to be in business. We are not going to beat him by buying up maximum amounts of acreage in the West.

Mr. DAWSON. You say you have approximately 4,500 acres of Federal reserves?

Mr. PUTZELL. That is right, sir.

Mr. DAWSON. And you feel that is not sufficient. Do you care to elaborate on that a little further?

Mr. PUTZELL. As I said a moment ago, we have a total of 6,500 in all, 4,400 to 4,500 being Federal, the balance being State leased, and then there is a teeny bit of privately owned land, so small it is hardly worth throwing in here.

Mr. DAWSON. You have about a 20-year ore reserve life for your plant?

Mr. PUTZELL. On the entire thing, that is, the 6,500 acres. Our experience has been that even with those 4,400 of Federal land which, of course, have the best ore on it, far and away better than the State-leased land and the little piece of private property we have—our experience has been that on the whole thing we end up with only 5 percent of the acreage usable to us in terms of ore. So that again I would like to say, Mr. Dawson, acreage alone is not the test, in our judgment, out there. It is what is in those acres that counts, and we cannot always be sure, because the Federal Government does not let you go in and satisfy yourself as best you can, before you get a piece of the property under lease from them, as to how many tons of reserves there are in a given acreage.

Mr. DAWSON. Actually you should have gone to the Government and asked them for—I suppose you did anyway—100 percent accelerated depreciation under a certificate of necessity, because you state that allows you to depreciate in a 20-year period, and yet you have only got 20 years of ore reserves left?

Mr. PUTZELL. That is right.

Mr. DAWSON. What are you going to do for the other four-fifths of your plant which has approximately 40-year depreciation period?

Mr. PUTZEL. That is why this bill is of more urgency to us, Mr. Dawson, than it might appear to be to other people. We have a big installation out there. We are the only industry in the town of Soda Springs, as you probably know, sir. It is a matter of serious

moment to us to be able to protect the normal life of this plant with reserves. Of very serious moment.

Mr. DAWSON. It is a very serious problem with us, I might say, Mr. Putzell. This is in Mr. Budge's district, but the people in my area also get up into that area, and we would hate to see unemployment develop due to some inaction on our part in failing to give you enough reserves to keep operating.

Mr. PUTZELL. With respect to the expansion again, I would like to say we think there will be a 50-percent increase of consumption of phosphorus in this country within the next 5 years, and I believe the entire industry feels that way.

The expansion plans of our company are going to be materially affected by the availability of reserves in the West, as again evidenced by what just happened in the future expansion of the Tennessee plant where you know what you are buying in advance and you can get the material you need.

As a matter of fact, I believe you will find electric current is cheaper in the West, but it is a combination of factors, not just current, not just ore, but it is the whole ball of wax, including transportation, including access to markets, including labor supply, including water, including where your competitors' plants are ,the competitive aspects of the problem. Many factors go into the determination as to where the expansion or a new plant is to be located, as I am sure you know.

Mr. DAWSON. Perhaps had power been available down at the Vernal location at the time you were considering that, you undoubtedly would have secured some acreage there, would you not?

Mr. PUTZELL. Yes, sir, we would have. In fact, as you may know, Mr. Dawson, we had an option on the very land now optioned by San Francisco Chemical Co. Some years ago we looked at it. It is 125 miles from rail. It has, to our knowledge, little or no water available. A little, but very little.

Mr. DAWSON. You have not heard we have changed that with the passage of the upper Colorado project. We expect to have water and power there for you.

Mr. PUTZELL. That makes a difference.

Mr. ASPINALL. If my colleague will yield. They will not easily have water for this operation. If you remember, they kind of took us over a rough road on the Echo Park inspection.

Mr. DAWSON. I will explain to my friend that under the central Utah project, there is considerable water to go to the Vernal area from the Starvation Reservoir, which will improve the water picture greatly.

Mr. PUTZELL. Mr. Dawson, may I make one further comment in response to your question?

Mr. DAWSON. Yes.

Mr. PUTZELL. This business of distance from rail and the question about how much of the available known reserves is now useful, the figure 20 percent has been used; and we said, in our judgment, with the extension of lines on either side of existing ones, all of the reserves in Idaho are useful.

In reading some of the previous testimony, a statement was made that with respect to an area—I think it was called Dry Ridge—it is 35 miles from present railhead, and that it would cost $3 million to

put in a railroad, and that was a very substantial piece of money when you are bringing out $5.50 per ton grade ore from that site.

That is obviously this high-grade ore that is being used by everybody, including electric furnaces, but exclusively in connection with fertilizer operations. The kind of low-grade ore that we use 84 percent of and mix with 16 percent of the high-grade ore costs maybe one-fourth or one-fifth of the $5.50.

Now, sir, if it is expensive to amortize a $3 million railhead when you are pulling out the high-quality, high-priced stuff, think of how much longer it takes to amortize that same railhead that costs just as much when you are bringing out stuff that costs a quarter or a fifth as much as the high priced. That is the kind of problem we are concerned with, because we are using both. More of the low quality, which is cheaper than the high.

Mr. DAWSON. That brings me to my next question. Both you and Mr. Gillet have testified that you are interested in developing this low-grade ore in the West. Do you continue to contemplate doing that or do you anticipate you may get into some high-grade production out there?

Mr. PUTZELL. Sir, we have ever since we have had a plant been using low grade, and all of our plans encompass continuing to do so. We are now using it. As I indicated, our last 4 years' experience shows that some 85 or 86 percent of the content that goes into our operation is low grade. As far as I know, unless we are able to develop some other process, which we have no present plans for, we will be continuing to be using low grade.

Mr. DAWSON. You feel without this bill we are endangering the development of this low-grade ore if we do not give sufficient acreage within a State to permit an economical operation?

Mr. PUTZELL. I do, sir The economics of the low-grade ore are such that you have got to make it possible to bring to one of these big furnaces, and the transportation and mining and other costs will ease up.

Mr. DAWSON. That is all.

Mr. ROGERS. Just a few questions, Mr. Putzell. Do I understand your testimony to be that at the time Monsanto went into this operation in the West that you understood or knew at that time your reserves were only 20 years?

Mr. PUTZELL. No, sir; I do not think I said it. If I did, I did not mean to, Mr. Rogers.

Mr. ROGERS. How much did Monsanto consider their reserves to be at the time they entered into the expenditure of this $15 million?

Mr. PUTZELL. Monsanto, at the time we entered into our original operation out there—by the way, that $15 million is present and as a result of several expenditures, not all the first one.

Mr. ROGERS. I see.

Mr. PUTZELL. At the time we started, Mr. Rogers, we thought we had 12 million tons of reserve ore, which, based on the capacity of the one-furnace plant we were planning to put in, would be, according to our figures, a 40-year reserve. We felt that was the kind of a risk that a company like ourselves should take.

We are in the chemical business. Today 40 percent of the products we sell were not in existence 10 years ago, sir. So we are in the risk business all the time. We are dependent on research, which is one

way of risking capital. Getting acres of land is another. Drilling for oil is still another.

So we felt that that was the kind of an economic risk that a company like ours should take, and we did.

Now, after spending several hundred thousand dollars, we come up and find that less than 5 percent of the acreage that we have—distinguishing now from tons—that that amount of the acreage was usable to us. So we have got a situation here now where we have got 20 years of reserves today, we think, in terms of our larger capacity. But when we deal with the acreage problem it cannot be related in the same fashion.

Mr. ROGERS. Let me ask this question, Mr. Putzell, in regard to your 5 percent. You determined subsequently, of course, that you had only 5 percent usable acres. I believe you told Mr. Aspinall it would not be good business to turn the balance of that back. Under the present method of operation, does the Department of the Interior permit you to bid on properties or to ask that certain properties be put up to bid on, and if you are successful in getting the bid, to turn back such amount of property that you presently have to keep you within the confines of the present limitations?

Mr. PUTZELL. Mr. Rogers, I do not know the technical answer to that, sir. But I can tell you this: that one of the real problems to all of the operators like ourselves, with big fixed installations, is to have enough flexible room, enough freeboard, as was used heretofore, to be able to get in and bid for a piece of property that we consider necessary. We have given up some small acreage, and we have acquired new since we first went out there, but I cannot tell you whether you can bid in new and then give up old if it takes you over the maximum. But I would guess you could not because, as I say, the practice of trying to maintain some free room you can use if a piece of property comes up for bidding and which you feel for some reason or other you have to make a bid on.

Mr. ROGERS. Mr. Putzell, the 5 percent estimate is a minimum estimate, is it?

Mr. PUTZELL. No, sir; it is not our minimum estimate. In fact, our minimum estimate is a little lower than 5 percent. I think I said less than 5 percent, sir.

For competitive reasons I would rather not go any more in detail unless the committee wants it, but we feel less than 5 percent is usable to us today.

Mr. ROGERS. I wonder if you would be good enough to furnish the committee with a letter or some data concerning the present reserves of Monsanto Chemical Co. and the manner in which you have determined those reserves. In other words, whether or not you have used horizontal formations at lower depths, and information of that type with which you are thoroughly familiar. In other words, Mr. Putzell, I think that this committee, in all fairness, ought to have the information surrounding this entire problem. I think that perhaps the original legislation limiting statewise might have been prompted to some degree by the thought that, if they allowed all of this acreage to be acquired in one State, there might be a centralization of the operation and the economic situation in other States might be detrimentally

affected. I do not know whether it was or not, but it seems to me there might have been a desire to spread around the economic picture.

I think if we could get that information it would help.

Mr. PUTZELL. I will also check the legislative history, sir, and see if there is anything on the point you just raised.

Mr. ROGERS. Fine. We will appreciate that.

Mr. ROGERS. I believe you stated there were 6,500 acres in the holdings of Monsanto.

Mr. PUTZELL. 6,500; yes.

Mr. ROGERS. Is that all in Idaho or do you have any in Montana?

Mr. PUTZELL. Mr. Chairman, I believe it is; because, as I said a moment ago, it has to be within 30 to 35 miles of our plant, and the closest other State to Idaho, which is also closest to our plant, is Wyoming, and there is a mountain range between our plant and Wyoming.

Mr. ROGERS. What I had in mind was whether or not you had any lands under lease from private groups or any fee land that you were holding in other States.

Mr. PUTZELL. No, sir. Included in the 6,500 acres is 700 of private land, and the balance is State. As you heard earlier, we did have an option down in Utah back some years ago which we gave up because of the fact it was not developable to use in the kind of operation we have since been able to start in Idaho.

Mr. ROGERS. Thank you very much.

Mr. BUDGE. May I ask one additional question?

Mr. ROGERS. Mr. Budge.

Mr. BUDGE. In order to clarify a little bit the answers to the questions propounded by the chairman, when you originally went into Soda Springs your operation was intended to be a one-furnace operation; was it not?

Mr. PUTZELL. Yes.

Mr. BUDGE. And your 40-year reserve expectancy was based upon a one-furnace operation?

Mr. PUTZELL. That is right, sir. The 12 million tons was based on the one-furnace operation.

Mr. BUDGE. You have substantially increased that original operation, have you not, in fact, doubled it?

Mr. PUTZELL. By approximately 2½ times we have increased it, Mr. Budge.

Mr. BUDGE. In other words, your original estimate of the reserves then would have to be decreased in the ratio of 1 to 2½?

Mr. PUTZELL. Yes, sir; and that is why I said we felt we had about 20 years' reserve for our present plant.

Mr. BUDGE. Thank you.

Mr. ROGERS. Thank you, Mr. Putzell.

Mr. PUTZELL. Thank you for hearing me.

Mr. ROGERS. Our next witness will be Fredrik Waiss who represents the Stauffer Chemical Co. of San Francisco, Calif. If you will identify yourself, you may proceed with your statement.

STATEMENT OF FREDRIK S. WAISS, ATTORNEY FOR STAUFFER CHEMICAL CO.

Mr. WAISS. Thank you, Mr. Chairman.

I am Fredrik S. Waiss, and I am of the office of the general counsel of Stauffer Chemical Co.

Stauffer Chemical Co. is the owner of groups of patented phosphate mining claims in the States of Idaho and Wyoming and holds a lease from the Bureau of Land Management of 540 acres of Federal land adjacent to one of its Wyoming properties. It either directly or through its affiliated company, Western Phosphates, Inc., is also a user of approximately 250,000 tons of phosphate rock annually in the production of single and treble superphosphate and other plant food products.

Stauffer Chemical Co. believes that the passage of H. R. 8394 would be neither in the public interest nor the interests of the private holders of phosphate properties. The reasons for this position have been largely set forth in the testimony of D. L. King, president of the San Francisco Chemical Co. In order to avoid unnecessary repetition, we wish to join in the statement which he has made to the committee and to adopt the points made by him as our own. There are certain phases of the matter, however, which I would like to additionally discuss.

The 5,120 acres permissible holding in a single State under the present law amounts to exactly 8 square miles, and these 8 square miles are in addition to the phosphate land which the individual or corporation can hold under lease from the State in question or any patented mining claims. The preceding witness testified to substantial holdings of State land in the State of Idaho in addition to the more than 4,400 acres of Federal land held by it in the State of Idaho.

Increasing the allowable Federal acreage to 10,240 acres (16 square miles), as this bill would do, cannot be justified on the basis that added reserves are needed to assure the continued operation of any of the rock-processing plants. Even if such a processor held no State or private land, the reserves that would be available to it in 8 square miles western phosphate land would provide sufficient reserves of from 50 to 200 years for the largest rock-processing plant in the West.

Mr. King has actually been the only witness to appear so far who has sought to correlate mineable tonnages of rock to acreage in the western phosphate field. The other witnesses have spoken generally in terms of total reserves, but they have not sought to reduce that testimony to a question of mineable tons of rock from an average acre of land or an average foot of outcrop.

But certain things that can be derived from the testimony of the earlier witnesses strongly bear out Mr. King's testimony as to the enormous tonnages which can be obtained from very limited acreage of land in the western phosphate field, and particularly in the State of Idaho.

The last witness testified that his company holds a total of 6,500 acres, that only 5 percent of that acreage contains mineable rock, and yet that 5 percent gives it reserves for a 2-furnace plant for 20 years.

The thought that immediately occurs to one is that, if they were only to convert a fraction of that acreage from unusable land to land suitable for their use, they would have reserves for any reasonable period that they could ask. The very fact that they can get 20 years of reserves out of 5 percent of 6,500 acres bears out very strongly the fact that the only thing they need to do is to give up some of the land which they have found to be unsuitable and to acquire land which is suitable for their use.

We submit that this can be done just as satisfactorily under the present 5,120-acre limitation as it could if the limitation were increased. If they only acquired half of that acreage in usable phosphate land, they would have all the phosphate that they could use for their present furnaces or double the capacity for a long, long time to come.

Remember, always, as has been pointed out before, as properties are depleted a lessee can give them up. It does not have to give up the lease in its entirety, it can give it up in small parcels and replace the surrendered acreage with land that is usable.

Increasing the allowable acreage as is proposed by the present bill would, on the contrary, encourage companies to take on more acreage than they could possibly require as a means of taking these properties off of the market. The cost of acquiring such leases would not be large compared with the potential advantages such restrictions on competition could give. Any later arrival on the rock-processing scene would be obliged to choose between properties of secondary attractiveness or not entering into competition. From the public standpoint, this would have the doubly adverse effect of restricting competition and delaying or preventing the maximum development of this important natural resource. Whenever a company obtains control of more phosphate land than is needed for its own reasonable requirements, that land is for all practical purposes removed from production, for the lessee will not develop it and no one else can do os.

Let me digress for a moment to say that we most certainly recognize the need for any producer for adequate reserves, and we would even go along with the figure of 50 years, which is the longest period that any of the witnesses has mentioned in testifying for the bill, as being a reasonable period of reserves. But we do submit that to give a lessee more public lands than would be required for reserves of that order is not in the public interest and, for all practical purposes, removes that particular land from production, and to that extent denies the Nation the development of this important natural resource.

There is another class of lessee who also stands to benefit if this bill is enacted. This is the speculator, the individual or company who acquires leases with the intention of holding them until they can be sold at a profit. Such a speculator will do, of course, only the minimum development work on the property. Again, the public is doubly the loser. The speculator rather than the Government receives the higher price the property eventually yields, and it has been kept out of the hands of actual developers until one comes along that is willing to meet the speculator's price.

That there has already been considerable speculation in these western phosphate lands is evidenced by the fact that the company with the largest acreage of Federal land in the State of Idaho acquired approximately 90 percent of that land from such a speculator. Recently another such speculator optioned leases that it had acquired for a total expenditure of approximately $150,000, to a company at a purchase price of $3 million.

Now when the last witness testifies that the bids on public offerings of phosphate lands have been considerably higher in the last year or two than they have been earlier, I recognize that he is absolutely right. But I would much rather see those additional payments for this land going to the Federal Government and, therefore, the public than to see these properties acquired by a speculator, and then held until he, rather than the Government, can have the benefit of the premium that these properties eventually command.

Particularly in the case of western phosphate where so much of the mapping and geological work has been done by the Federal Government does such speculation seem undesirable. This bill would, however, encourage such lessees to speculate on the public domain, and to keep the properties out of production while they do so.

Mr. King has already pointed out the manner in which this bill would encourage mining methods on Federal lands not in accord with good conservation policy. This is possibly the most important consideration of all, from the standpoint both of the public and of the operator of privately owned phosphate land who must compete with such operations on Federal land. It resolves itself to a comparatively simple proposition. If a lessee is permitted to acquire excessive quantities of Federal land, it is under considerable temptation to move around over its leaseholds, removing just the rock which can be mined at minimum cost, leaving vast quantities of rock unmined and the properties in such condition that at least some of them probably never will be. Holding lessees down to a reasonable acreage tends to encourage the more complete development of available tonnages off of each property.

The Government benefits in receiving additional royalties from these lands and wasteful depletion of the Nation's reserves of western phosphate rock is avoided.

Now the last witness had some remarks on the subject of conservation, most of which we can fully subscribe to. As a matter of fact, the San Francisco Chemical Co. has pioneered the work of beneficiation of the lower grade western phosphate rock up to acidulation grade rock.

On the Stauffer Chemical Co. property at Leefe, Wyo., for example, there is a 6-foot bed of high-grade acidulation grade rock in place. After removing that bed, the San Francisco Chemical Co. was successful in developing a method of upgrading the bed below it, which is another 6-foot bed, from around 27 or 28 percent P_2O_5 rock to acidulation grade rock. The process has worked very successfully, and it has recently been extended to include the bedding below the second bed, so that one bed after another is being successfully worked, and not only used, but actually upgraded to the point where it is excellent acidulation grade rock.

On its underground operation in the Crawford Mountains in Idaho, the San Francisco Chemical Co. is completing the engineering on a

process which will permit it to mine a whole series of beds as a unit and to use the combination of high-grade and low-grade rock as a beneficiation feed which will produce—and, as I say, the engineering on the plant is right now in progress—which will produce a uniform acidulation grade rock.

We feel very strongly that the future of the western phosphate industry is tied quite intimately to the metallurgical problems involved, the upgrading of the material that is found, so that both the high-grade and the low-grade rock can be recovered. The companies that we are interested in are devoting a great deal of time and money to this basic problem.

There was a reference in Mr. Dawson's State to a deposit that was recently optioned there of some 20-percent material. The metallurgy on that particular material has advanced to the point that we know we can create furnace-grade material from that rock. Work on it is continuing, and there seems every reasonable probability that it can be upgraded to acidulation grade.

Success in just single metallurgical operation of that character will, of course, greatly improve the entire reserve position of a company or group of companies.

Now, just to comment on another point raised by the last witness, he quoted Mr. King's testimony with reference to the haul of 15 miles as being the maximum for the furnace-grade shales. I believe that he misunderstood Mr. King's testimony. His testimony, if you will refer to his statement, was that furnace-grade shales would not support more than a 15-mile truck haul either to plant or to railhead. He referred to the fact that ton-mile hauling cost in the mountains was approximately of the nature of 6 cents. When you consider the last witness' testimony as to the value of furnace shales you can readily see if you pay more than 6 times 15 cents for just the truck haul that the movement of the rock becomes uneconomic. It would be possible, of course, to move shales greater distances by rail, and where, as here, they propose to put in a rail line to the shale, a 30-mile haul seems entirely feasible. But, even so, if you will examine a map—as a matter of fact, we have one right here—of the Idaho phosphate deposit—this is color keyed by ownership, but with the red line indicating the outcrop in the area and the overlay of color indicating the leaseholdings, both Federal and State.

The railway line of the Union Pacific comes through here [indicating]. Distance from that railway line or one of its spurs determines the economical feasibility of presently developing any phosphate property in the State of Idaho.

A property situated as certain of these are, say, this property over here, may be ideal from a mining standpoint, but from the standpoint of its being economically developable today it is just out of the question. If in the next generation the transportation situation changes, that may no longer be true, but as of the present time the statement that Mr. King made with reference to the economic feasibility of development of the properties there, we believe, can be completely defended. There actually remains comparatively limited acreage of Federal phosphate lands within this area of feasible transportation.

If this measure passes, it will make it possible, not for one but for a comparatively few individuals or companies to acquire the remaining desirable acreage, and it will certainly give those companies a

highly favored position with reference to any newcomer who sought to develop a processing operation in that area.

We have given what we believe to be a variety of valid reasons why the change proposed by this bill will have undesirable effects. We submit that the proponents of the bill have not cited sufficient offsetting benefits to justify its passage.

They have almost uniformly talked in generalities, rather than actually grappling with the problem of the reserves present in a given acreage of land.

I would like to comment quite briefly on the testimony of Mr. Gillet.

The Montana picture is somewhat different from that in the Idaho-Wyoming-Utah area. Their beddings there are quite different than the ones that are found in the Idaho area or in the other two States I have named. But I call your attention to the fact that even in Montana under relatively less favorable conditions that none of the present operators have even one-half of the acreage presently available to them under the present law.

If you will refer to the statement of present acreage as of January of this year, prepared by the technical staff of this committee, you will find this to be true.

Mr. Gillet testified that approximately a 3 years' supply of rock could be obtained from a 400- to 500-acre lease. If this testimony is true, then this would indicate that they could have approximately 34 years of reserves in 5,120 acres. This 34-year period should afford ample time for the company to carry out work on the metallurgical problems involved in using lower grade materials. To the extent that this work is successful, the reserve period would be extended.

He mentioned that they had a necessity of blending rock. But again, taking his estimate of 400 to 500 acres to a single lease, that means that they could have from 10 to 12 different properties under the present law. Certainly any reasonable blending could be obtained from 10 or 12 different sources of rock.

To sum up, we have opposed this legislation for one simple reason: We believe that the accumulation of public phosphate land beyond the reasonable requirement of the lessees is not in the public interest, and that 10,240 acres of Federal public land is far in excess of any reasonable acreage requirement.

Thank you for the opportunity to present this testimony.

Mr. ASPINALL (presiding). Does the gentleman from Montana have any questions?

Mr. METCALF. No questions.

Mr. ASPINALL. The gentleman from Utah, Mr. Dawson.

Mr. DAWSON. You mentioned a number of companies that you are interested in in your testimony. Would you just tell us who these companies are?

Mr. WAISS. I am appearing representing the Stauffer Chemical Co. I have also referred to certain testimony given by Mr. King, president of the San Francisco Chemical Co.

Mr. DAWSON. What is the relation between the Stauffer Chemical Co. and the San Francisco Chemical Co.?

Mr. WAISS. They have long been associated both as supplier and user and as landlord and tenant.

Mr. DAWSON. Is there any joint ownership at the present time?

Mr. WAISS. We would say they were of the nature of affiliated companies at the present time.

Mr. DAWSON. Which is the holding company?

Mr. WAISS. Stauffer Chemical Co. owns 50 percent of the stock of San Francisco Chemical Co.

Mr. DAWSON. Where is the headquarters for Stauffer Chemical Co.?

Mr. WAISS. Actually, the administration of this operation is from San Francisco. The main office of the Stauffer Chemical Co. is in New York City.

Mr. DAWSON. There is no foreign ownership?

Mr. WAISS. No. Stauffer Chemical Co. is a publicly owned company and there, of course, are many stockholders to it. I believe in the order of 5,000. But it is definitely a United States company, and any foreign stockholdings in it would represent a small minority of the stock.

Mr. DAWSON. You mentioned another company in which you were interested with a mine there that you were operating.

Mr. WAISS. Not a separate company, Mr. Dawson.

Mr. DAWSON. Where do you have your operation?

Mr. WAISS. The Stauffer Chemical Co. owns a patented mining claim in the State of Wyoming. It is a 540-acre lease from the Bureau of Land Management on some adjacent phosphate property. It also has fee land in the State of Utah, phosphate land.

Mr. DAWSON. Where do you own Federal leases?

Mr. WAISS. The only Federal lease owned or held by Stauffer Chemical Co. is in the State of Wyoming.

Mr. BUDGE. Will the gentleman yield?

Mr. DAWSON. I will be happy to yield.

Mr. BUDGE. Does either Stauffer or San Francisco Chemical or Western Phosphates or one of the affiliated companies you mentioned hold a recently acquired option on a 3,000-acre tract in Wyoming?

Mr. WAISS. San Francisco Chemical Co., as has been testified to by the last witness, recently optioned 3,000 acres of privately owned land in Mr. Dawson's State near Vernal. That is correct.

Mr. BUDGE. But none in Wyoming?

Mr. WAISS. None in Wyoming.

Mr. BUDGE. Thank you.

Mr. DAWSON. That is the point I am getting at, as to whether or not you are in a several-State operation out there. Your operation is not confined to any one of the Western States.

Mr. WAISS. Yes, we own fee land in two States. San Francisco Chemical Co. has recently taken the option that has just been referred to in your State of Utah.

Mr. DAWSON. But, actually, with your diverse operation out there, you are now in a position to be able to secure 10,000 acres under lease because you are operating in several States. Is not that a fact?

Mr. WAISS. We believe that actually the present law may well have been framed as it is to make it possible for a company to operate in more than one State. The feasible limitations on transportation of rock would probably dictate that the operations in one State be entirely separate from those in another. But we think it quite likely that the law was so phrased in order to not prevent a corporation or individual from operating in more than one State.

Mr. DAWSON. You stated a while ago that your opposition to this bill was based on the fact that you did not feel it was right for any one company to get in a favored position. Is it not a fact, then, that you are in the favored position now, and you want to keep any of these other companies from getting in the same position you are in by reason of getting 10,000 acres when they are now limited to 5,000?

Mr. WAISS. Actually, what I said was that I did not believe that a company was justified in unreasonably acquiring and holding Federal land beyond its own legitimate reserve requirement, and I accepted the figure of 50 years that was the greatest figure that any witness has testified to as being what would constitute a reasonable reserve. All of our holdings at the present time—even if you took both companies and combined the two companies together from the standpoint of the total holdings, our total holdings would not equal the present acreage limitations for a single State.

Mr. DAWSON. It does not at the present time?

Mr. WAISS. No.

Mr. DAWSON. But it could the way you operate?

Mr. WAISS. Well——

Mr. DAWSON. In other words, you have it available to you, and these other people who are confining their operation to the immediate vicinity of their plants are more or less limited. But, as I understand your operation, you are not in the processing business in these areas, are you?

Mr. WAISS. We have an affiliated company, Western Phosphates, Inc., which is in the production of treble superphosphate, phosphoric acid, and other chemicals, again in your State of Utah down near Salt Lake City.

Stauffer Chemical Co. itself maintains plants for the production of single superphosphate and other multiple plant food in the State of California, and in the Pacific Northwest.

Mr. DAWSON. Does the Stauffer Chemical Co. control the Western Phosphate Co.?

Mr. WAISS. Control? No. We have 50 percent interest in that company.

Mr. DAWSON. That is control, is it not?

Mr. WAISS. Fifty percent is in other ownership. It is an even split.

Mr. DAWSON. I am genuinely concerned about seeing that our area is developed out there, and I do appreciate the fact that you are in business in my district. But I would hate to see these other people who want to go out there and set up plants be restricted by failure to have sufficient reserve acreage to justify their operation.

I can see in your operation a spreading over enough States to give you the maximum acreage of 10,240 as compared with 5,120 for these other people. I am wondering whether your interest might be more to block some of these other companies than it would be thinking of the public interest.

Mr. WAISS. Mr. Dawson, it gets down to a question of what constitutes adequate reserves. Certainly, I can agree with your statement that every operator is justified in having fully adequate reserves. That is why we have taken the maximum gfiure of 50 years in our own discussion of the matter. But until it is demonstrated that 5,120 acres of western phosphate land will not produce those reserves, we

do not believe that a case has been made for the present bill, and that most certainly has not been done.

Mr. BUDGE. Will the gentleman yield again?

Mr. DAWSON. Yes.

Mr. BUDGE. Adequate reserves for what? What kind of operation are you talking about?

Mr. WAISS. Either the present or any reasonably foreseeable expansion of plant capacity, Mr. Budge.

Mr. BUDGE. You heard Mr. Putzell say that when they originally went into Soda Springs they put in one furnace, they thought they had reserves for a 40-year period. Since that time the capacity of the plant has increased 2½ times.

Mr. WAISS. Yes.

Mr. BUDGE. And that now they have foreseeable reserves for a 20-year period. What if they decide to double the capacity of the present plant? Then would you still say they had a 50-year reserve?

Mr. WAISS. No. I would say that if they have 20-year reserves with only 5 percent of their holdings containing usable phosphate rock, then their problem is not too difficult a one, because they can replace some of that unusable acreage with other acreage to provide them with any additional reserves that they need.

Of course, this whole question, unless you get down and come to grips with the problem of actual production per acre, it can be quite difficult to reconcile the figures.

For example, if you are working a strip property, if you go 100 feet down from the outcrop down the dip-slope, you will produce just half as much rock as you go 200 feet down. Of course, as you go farther down your stripping ratios become less favorable. Now, wherever you decide to stop, will really determine what your reserve is in your own mind. However, good conservation practice might dictate taking quite a bit more rock.

Mr. BUDGE. If the gentleman will bear with me just a moment, it is my understanding that San Francisco Chemical and perhaps Stauffer and perhaps Western Phosphates have been in this mining operation of phosphate in my State for some 50 years. Until very recently you have not been interested in any of the lower grade ores, you simply mined the high grade ores. What did you do with the lower grade ores?

Mr. WAISS. Until electric furnace operation arrived on the Idaho scene there was no known use for those ores. When even in advance of the arrival of the present operators on the scene, when the plants were still in the talking stage. San Francisco Chemical Co. approached, first, Monsanto and later Victor and Westvaco, and told them that they were in a position to stockpile some furnice shales which lay on top of a high grade bedding which was being worked by San Francisco Chemical Co. It offered to consign those materials to these operators—Monsanto was the first—if Monsanto would merely pay the cost of the selective mining and stockpiling the material, I believe around 35 cents a ton, so that it could be held until the furnaces were in operation.

For reasons that are not known to me the offer was declined. As a result, there was no market for the material, and it was moved with the overburden, and that portion of the material was, therefore, lost.

Mr. BUDGE. In other words, over this 50-year period either Stauffer or Western Phosphates or San Francisco Chemical has been removing the high grade rock and letting all the rest of it become commingled with the overburden?

Mr. WAISS. No, Mr. Budge, quite the contrary.

Mr. BUDGE. That is what I am trying to get—the conservation here.

Mr. WAISS. I mentioned one property where this particular situation existed. Because of the inability to find anyone who was willing to purchase the rock, some shales were in this specific case lost.

However, in our own property in Wyoming at Leefe, the property where the bulk of Stauffer Chemical Co.'s production has come from, there a different bed was being worked. There are a series of beds in the phosphoria referred to in the area as A to Z, with both the A and Z beds being high grade material, and varying grades being scattered through the some 200 feet of phosphoria in the series.

In this case the bed was A bed, the top bedding, so no shales had to be removed. What we were successful in doing was in upgrading the lower grade bedding which by any earlier practice would have been completely wasted. The San Francisco Chemical Co. succeeded in developing a method of beneficiating this lower grade material which permitted it to be raised to accidulating grade rock, and indeed substantial part of the rock being accidulated at our Garfield, Utah, plant is of this beneficiation material.

Mr. BUDGE. I do not want to take any more time of the gentleman from Utah. I thank him for yielding to me.

Mr. DAWSON. I am just concerned about this question of conservation.

Mr. WAISS. Yes.

Mr. DAWSON. I know that our people at home are very concerned with it, and the thing that concerns me is the fact that in this case here we have the Government, which is also very much concerned with conservation, backing this bill, and they did back it in the 80th Congress for that very reason, that they wanted to get lessees who were willing and prepared to develop all of these ores; that is, the low grade and the high grade. That is the reason the acreage was increased to 5,120. Here we have all the western mining associations, practically—I do not know of any exceptions—who are backing this measure, the Government backs it, and you and Mr. King, who are of the same company, are the only people opposing it. I just cannot understand the reason for your opposition.

Mr. WAISS. Mr. Dawson, if the only reason for not passing this bill was our opposition to it, I would most certainly assume that the bill would pass. If the facts that we have presented and in a negative sense the facts which those favoring the bill have failed to present, do not themselves compel a conclusion that the bill is an undesirable one, then it should be passed. But we believe that the facts speak for themselves and that they speak far more eloquently than any individual witness can.

Mr. DAWSON. I agree with you on that score, and I also agree with my chairman that our talk here is to find out what these facts are.

Mr. WAISS. Exactly.

Mr. DAWSON. And try to weigh, if we can, the interest one side may have over another, and come up with the best conclusion we can.

That is all, Mr. Chairman.

Mr. ROGERS. Mr. Budge.

Mr. BUDGE. Mr. Waiss, as I understood it in Mr. King's testimony, until very recently your 3 companies—I assume Western Phosphates and San Francisco Chemical and Stauffer—are the 3 companies that are affiliated. Is that the extent of it?

Mr. WAISS. That is the extent of it; yes.

Mr. BUDGE. Were furnishing 100 percent of the phosphate rock that was being shipped out and processed in Wyoming; is that correct?

Mr. WAISS. I believe that it is still true.

Mr. BUDGE. And also 100 percent of that in Utah?

Mr. WAISS. There may be some small operations there, but I believe it is substantially true.

By the way, both of these facts apply to San Francisco Chemical Co. Actually, Western Phosphates, Inc., is not engaged in the production of phosphate rock. It is a consumer. Stauffer Chemical Co., while it owns the property which is being worked by San Francisco Chemical Co. in the State of Utah, does not itself own any phosphate properties in the State of Utah.

Mr. BUDGE. What percentage of the rock, both in the past and in the present, have one or all of these companies shipped or processed in the State of Idaho?

Mr. WAISS. Would you read that question?

Mr. BUDGE. For 10 years back and for the present time, what would the percentage be of that mined in Idaho?

Mr. WAISS. From the Wyoming property, a total through——

Mr. BUDGE. We had Wyoming a hundred percent and Utah is practically a hundred percent. What percent is the total in Idaho?

Mr. WAISS. Oh. For what period?

Mr. BUDGE. Say 10 years ago, 1946 to around 1956.

Mr. WAISS. The total production from the State of Idaho during the period through 1955—I do not have the 1956 figures on this chart—amounted to 8,324,000 tons. Of that amount, 1,032,000 tons were produced by the San Francisco Chemical Co. in the State of Idaho. So it would represent approximately one-eighth of the production there.

Mr. BUDGE. In other words, you have been mining 100 percent in Wyoming, 100 percent in Utah, and one-eighth in the State of Idaho?

Mr. WAISS. That is correct.

Mr. BUDGE. And perhaps in 1945 rather than 1955 you would have had a different figure. What would your percentage have been in 1945 in Idaho?

Mr. WAISS. In 1945, the operation in Idaho was actually just starting up again after a considerable period of shutdown. San Francisco Chemical Co. had total production of some 50,000 tons in the State of Idaho in the year 1945.

Mr. BUDGE. What was the total production that year?

Mr. WAISS. There was no other production that shows here in the State.

Mr. BUDGE. Then you had a hundred percent in Idaho in 1945. What about 1950? Do you have that figure?

Mr. WAISS. In 1950 we were not producing any rock in the State of Idaho.

Mr. BUDGE. Your operation is entirely a different one, is it not, than the other companies that have expressed an interest in this legisla-

tion, in that you mine the high-grade ore in Idaho and then ship it to San Francisco for processing? Is that correct?

Mr. WAISS. We ship it to—well, San Francisco Chemical Co. mines rock and ships it to a variety of points. Part of it goes to Garfield, Utah. Part of it goes to the Pacific coast. Portions of it will be sold to furnace operations in the Idaho area.

Mr. BUDGE. But you do not put in any processing plants in the area. That is what I mean.

Mr. WAISS. We have no electric furnaces or wet process in the immediate area; that is correct.

Mr. BUDGE. It seems to me that your problem would not be synonymous at all with that of these companies that go in and have a tremendous investment right in the area and must secure their ore in the area. You are dealing in high-grade ore that you ship long distances. From the history, it would seem to me if you are going to talk monopoly so far as these three States are concerned, that your two companies have pretty much had a monopoly.

Mr. WAISS. To the extent that that has been true in the States of Wyoming and Utah, it has been solely because the situation was not attractive enough to cause anyone else to go in there and mine rock.

You heard the testimony that this particular property down at Vernal, Utah, was optioned by the company represented by the previous witness. After the option period they decided that they did not want to operate it, and so gave up the option.

To the extent that there has been anything of the character you suggest, it has been purely because no one else has been sufficiently foresighted or energetic to go in there and start mining. Only a tiny fraction of the available properties have been at any time controlled by any one of the three companies that you have named.

Mr. BUDGE. I appreciate that.

Mr. DAWSON. Will the gentleman yield?

Mr. BUDGE. Yes.

Mr. DAWSON. I just want to bear out what the witness says in that regard. I know we have tried to interest people in some of those phosphate deposits, and it has not been because they have had a monopoly by any means.

Mr. BUDGE. I appreciate that so far as the ground is concerned, but in the production you have been the only one in the field, and that I am sure is for the reason which you state—that no one else figured out any way to make it an economic operation. But with the advent of the electric furnaces in the area, the problem becomes somewhat different.

Mr. WAISS. Yes.

Mr. BUDGE. I can also understand that without the electric furnaces being in the area, it would be impossible for your two companies to utilize the low-grade rock. So I am not criticizing you for that, because without the furnaces in the area there has been conclusive testimony here before this committee that you could not utilize the low-grade rock, it was a high-grade operation, as it must of necessity have been.

It rather seems to me that it is a little difficult to make the came comparison with your type of operation as to what is necessary and what might be necessary from a processing operation standpoint in the area.

Mr. WAISS. We do not seek to draw any parallel along that line.

What we are saying is that it is possible to analyze the reasonable needs of the other operators in the area, and that that reasonable analysis bears out the conclusion that 5,120 acres of Federal land, 8 square miles of this land, is quite sufficient.

Mr. DAWSON. Will the gentleman yield to me?

Mr. BUDGE. Yes.

Mr. DAWSON. It is very likely when we get upper Colorado power and water into the Vernal area you people will then appear before us backing this bill along with the rest of them. You would go in there then and build an electric process plant and perhaps you might sympathize with some of these other boys.

Mr. WAISS. Our figures indicate that in that 3,000 acres that is under option in your State there are more than a hundred million tons of phosphate rock. If all of the complex problems that would be involved in the development of the area—transportation, power, water, all of those problems—were to be solved, reserves would present no problem.

Mr. DAWSON. I understand that deposit is fairly well concentrated; is it not?

Is it not a thick vein?

Mr. WAISS. It is actually a bedding, some 20 feet thick, which is quite comparable in manner of deposition to the shale properties that are being worked in Idaho. It is relatively flat bedded, gently dipping slope approximately 20 feet thick.

Mr. DAWSON. It would be strictly strip mining operation, would it not?

Mr. WAISS. Yes, it would be a strip mining operation, as I say, quite comparable to the type of operation that is being carried out on the shale properties in Idaho, except the bed is not quite as thick as the average beds being worked for furnace shale by the various furnace operators in Idaho.

Mr. BUDGE. Do you know of any other properties owned either by Western Phosphates or Stauffer Chemical or San Francisco Chemical other than these 540 acres of Federal land in Wyoming, the 2,995 acres to which Mr. King referred yesterday, plus this 3,000 acre option in Utah?

Mr. WAISS. Stauffer Chemical Co. has fee holdings of 165 acres in Wyoming and 360 acres in Idaho. I believe those acreages were included in that 2,900 acres plus figure that Mr. King gave. I believe, if I recall correctly, that figure represented properties either owned or operated.

As to the tonnages produced in Wyoming, all the 1,327,000 tons produced in that State represents production to date from that one 165-acre parcel that we have referred to, and we are not anywhere near the end of that production yet. We still have substantial reserves in the property.

Mr. BUDGE. I was raised out in Bear Lake County. It was my recollection the development down there was by a British corporation. I was quite surprised yesterday when Mr. King said that the San Francisco Chemical had pioneered down there and it was and had always been an American corporation.

Mr. WAISS. For many years—I believe it goes actually back to around 1910 or 1915, in that area—the property at Bear Lake has

been owned in fee by Stauffer Chemical Co. At no time, to my knowledge, has there ever been any British ownership of the property. It was located just a short time before its acquisition by Union Phosphate Co., a predecessor of Stauffer Chemical Co.

Mr. BUDGE. What was the predecessor company, parent company, of San Francisco Chemical?

Mr. WAISS. Predecessor?

Mr. BUDGE. Parent company. Predecessor company.

Mr. WAISS. San Francisco Chemical Co. had British stock ownership, but it at no time owned the Bear Lake property.

Mr. BUDGE. How large would that stock ownership have been in San Francisco Chemical Co. before Stauffer bought 50 percent of the stock?

Mr. WAISS. Would you restate that question, please? I do not quite understand that question.

Mr. BUDGE. Read the question.

(The pending question was read by the reporter.)

Mr. WAISS. You mean, was the ownership of the stock of San Francisco Chemical British?

Mr. BUDGE. Foreign owned.

Mr. WAISS. Yes, that is correct.

Mr. BUDGE. What percentage?

Mr. WAISS. 100 percent.

Mr. BUDGE. That clarifies it for me, because I was surprised yesterday when Mr. King said San Francisco Chemical had always been an American corporation. I can understand an American corporation, and he was technically correct.

Mr. WAISS. Yes.

Mr. BUDGE. But the stock ownership was 100-percent British. Is that what you mean?

Mr. WAISS. Prior to the acquisition by Stauffer Chemical Co.; yes; that is correct.

Mr. BUDGE. At the present time, when, it would be the stock of San Francisco Chemical would be 50-percent owned by Stauffer Chemical Co. and 50 percent by British stockholders?

Mr. WAISS. Yes; that is correct.

Mr. BUDGE. That is all, Mr. Chairman.

Mr. ROGERS. Mr. Waiss, I have just 1 or 2 questions. I am sorry I had to leave during your earlier testimony, but we have a little Capital Transit problem in the Capital City that I am on the committee for.

Mr. BUDGE. You do not have to drive a bus, do you?

Mr. ROGERS. I may have to star tdriving a bus.

But, the question I want to ask, as I understand it, your operation, the operations of these three companies, insofar as this particular area is concerned, is on a commercial basis, not a processing basis. Is that right?

Mr. WAISS. A substantial quantity of the rock that is produced from this area is actually used by either Stauffer Chemical Co. or Western Phosphates, Inc., in the processing of——

Mr. ROGERS. That is shipped out for processing purposes?

Mr. WAISS. Yes. In one case to Utah, and in the other case to plants on the Pacific coast. That is correct.

Mr. ROGERS. Any rock that you mine out there that is used in the area in which you mine it is used by some other company which you sell it to on a commercial basis?

Mr. WAISS. Yes; that is correct.

Mr. ROGERS. Mr. Waiss, let me ask you this about that: What is the price situation insofar as the rock is concerned in relation with the other companies you are dealing with? What price are they paying your company for this rock as compared with the price that it would cost them if they were taking it off of Government property?

Mr. WAISS. Actually, to the best of my knowledge—and again I repeat, Mr. King is not here to give you an exact answer to that question—to the best of my knowledge, the rock that has been sold to them was high-grade rock, acidulation grade rock, which was used in the case of the electric furnaces for blending purposes with lower grade shales. The prices that have been paid have been, I believe the uniform prices for that grade of rock in the West. As Mr. King testified, that price is substantially the same that it was in 1906. It is one of the few commodities that has had very little change of price through the two or more wars that have occurred since that time. It has held quite uniform.

Mr. ROGERS. Then there is no highly competitive situation insofar as price is concerned with respect to this particular product?

Mr. WAISS. I believe that the prices of the various producers are comparatively close to each other. There may be some minor differences, but to all practical purposes the market has established a particular value for the rock.

Mr. ROGERS. That is high-grade ore?

Mr. WAISS. Yes.

Mr. ROGERS. What about the low-grade ore? Do you sell any of that to other companies?

Mr. WAISS. We are taking our lower-grade materials and beneficiating them to acidulation grade. So we are not selling in the form of low-grade material. I know of no low-grade materials being sold as such.

Mr. ROGERS. After the beneficiation process, has the end product been sold to companies not connected with your company at all or is most of that used by companies that are associated with your group?

Mr. WAISS. It is sold to various users. I believe that the greatest portion of it is sold to Western Phosphates, Inc., but sold at the same price as sold to others.

Mr. ROGERS. That is one of those in your group, is it not?

Mr. WAISS. Yes.

Mr. ROGERS. Western Phosphates, Inc., and then the Stauffer Chemical Co., and San Francisco Chemical Co. Are there any other companies in there?

Mr. WAISS. No.

Mr. ROGERS. Is any of this product sold to companies other than those three?

Mr. WAISS. I believe so, but in the case of beneficiated material I cannot be absolutely certain, Mr. Rogers.

Mr. ROGERS. As far as your knowledge is concerned, there is no low-grade ore sold?

Mr. WAISS. No. I believe that we are upgrading all of our low-grade production.

Mr. ROGERS. Where are your properties or the properties of San Francisco Chemical Co. located with relation to the properties of the Monsanto Chemical Co. in Idaho?

Mr. WAISS. The closest of the properties is, I believe, 30 miles away from Soda Springs.

Mr. ROGERS. 30 miles away?

Mr. WAISS. Yes.

Mr. ROGERS. Is your production there, insofar as your mined rock is concerned, for sale if Monsanto wanted to buy it?

Mr. WAISS. Indeed, it is. San Francisco Chemical Co. is very definitely in the busines of seeking markets for its rock.

Mrs. ROGERS. How many other companies are engaged in commercial mining in that particular area there?

Mr. WAISS. Virtually all of the other production is on a captive basis.

Mr. ROGERS. That is mined by the processors?

Mr. WAISS. Yes, or under direct contract to a processor. For example, it is my understanding that Westvaco has a 20-year contract, or had at the time they put in its furnaces there, a 20-year contract with J. R. Simplot to supply it rock for its furnace operation. It was on the basis of that 20-year contract that it made its very substantial investment out there.

Mr. ROGERS. Mr. Waiss, in your opinion, is the absence of commercial mining in that particular locality due to the fact that most of the market is taken care of by reason of the captive situation?

Mr. WAISS. That is correct. Apart from these captive operations, there is a very limited market and one which we are actively seeking to promote.

Mr. ROGERS. Do you anticipate in your operations and from your past history the possibility of a sizable increase in the market demand?

Mr. WAISS. That is, of course, tied to a variety of factors. In the long term we believe that the consumption of phosphorus will substantially increase. In the short term there has actually been a reduction in the use of phosphatic materials for fertilizer purposes. Such reduction apparently is tied to the farm recession.

Mr. ROGERS. Mr. Waiss, assuming that we do have an increased demand for phosphate, as the testimony in these hearings might indicate, that is, a tremendous increase in the demand, do you feel that the increased demand would create a situation where there might be an incentive for commercial mining in this particular area by people other than those engaged in the business at the present time?

Mr. WAISS. I think that is extremely likely.

Mr. ROGERS. Do you feel, Mr. Waiss, that in such event the product necessary for processing would be available at a price to the present owners of the processing plants to enable them to process it and make a profit on it?

Mr. WAISS. If I understand the question correctly, Mr. Rogers, my answer would be affirmative. Basically the price that can be paid by any rock processor is limited by the price it receives for its product less its cost of production. Unless its cost of production is sufficiently high, it cannot purchase rock, and its ability to purchase is, in effect, a determining factor on the price of the material. I would assume

that the market conditions for the finished product would have to be such as to pay those costs, and if it is, then, of course, they can afford to pay the cost of producing the rock itself, mining the rock.

Mr. ROGERS. What you are saying is simply this: If a commercial producer would not sell his rock to the processor at a price which would enable the processor to make a profit, and the processor did not have any other supply, the commercial producer would be destroying himself?

Mr. WAISS. Exactly.

Mr. BUDGE. Will the chairman yield?

Mr. ROGERS. Yes.

Mr. BUDGE. I think while you were out attending the other committee meeting Mr. Waiss stated that they had offered their low-grade ore to Monsanto, to Westvaco, and to Victor at a price which they thought was very reasonable. Is that correct, Mr. Waiss?

Mr. WAISS. Not exactly. I said it was my understanding that in 1949, 1950, 1951, in that general period, San Francisco Chemical Co., at one of its properties was working a bed of high-grade rock which was overlaid by some furnace shales, and it at that time approached, first, Monsanto and then subsequently the other companies which you have named, Victor and Westvaco, and told them, in effect, that it understood they were planning to put in furnace installations in the West, and offered to stockpile material for their use if they were interested in it. Mr. King was unable to induce them to agree to such a stockpiling arrangement and, as I say, his efforts proved completely unavailing to this end.

Mr. BUDGE. Thank you.

Mr. ROGERS. Mr. Waiss, a few more questions. Is it your contention—and I want to be thoroughly cleared up on this. I gather from the testimony of yourself and Mr. King that your major concern lies in the possibility upon the passage of this bill, that expanded opportunity on the part of the processor to capture their source of supply and to enlarge their reserves would be detrimental to the commercial market and create an unfair situation because of the location of the deposits with relation to the transportation facilities. Am I correct in that?

Mr. WAISS. In large part, yes, Mr. Rogers, but with some qualifications.

Mr. ROGERS. That is what I want to understand.

Mr. WAISS. Not to restate the entire story, but just to try to sum up a few of the points:

We do feel that if operators on the public domain are permitted, in effect, completely free sway—let's say they could get unlimited quantities of land—that it would be possible, thus working Federal domain, to merely take the rock that could be most cheaply mined, and that, if this were done, it would, in effect, constitute a form of unfair competition with anyone who was operating fee lands to develop the maximum economically mineable tonnages.

We believe that to restrict acreage to a figure related to the maximum reasonable requirement of any given operation, largest of the operations is in a sense a self-policing device to encourage the reasonable development of those lands.

We believe, therefore, that there is a beneficial effect to holding the acreage limitation in a single State to its present figure.

Mr. BUDGE. Will the chairman yield to me again?

Mr. ROGERS. Yes.

Mr. BUDGE. I cannot quite follow your reasoning on that, Mr. Waiss. Each of these witnesses for these companies that are using the furnaces has stated that they must blend the low-grade ore with the high-grade ore.

Mr. WAISS. Yes.

Mr. BUDGE. They have said they take practically all of the rock out of the deposits. In the history of your company, apparently the same thing has not occurred. For a good many years you took only the high-grade ore and left the rest of it. Now you are beneficiating the low-grade ore and I assume ultimately your companies will also mine the entire deposits. Is not that a logical conclusion?

Mr. WAISS. Let me be sure the record is completely straight on this: On any of the properties of Stauffer Chemical Co. there has been no low-grade ore wasted or in any way lost. At our property at Leefe——

Mr. BUDGE. But it has not been mined?

Mr. WAISS. It is in the process of being mined, and the remaining part is sitting there waiting to be mined. The remaining problem as far as the remaining lower grade ores is purely a metallurgical one, not a mining problem.

Mr. BUDGE. But you have now reached the stage in metallurgical development where you can use the lower-grade ores, where previously you did not use them. These other companies are in the same position, are they not?

Mr. WAISS. No. As far as our property in Wyoming was concerned, and it is the one from which Stauffer Chemical Co. has had substantial production, we were fortunate in that the higher grade material was the top one in the series.

After removing a very substantial quantity of overburden at burden ratios up to 14 to 1, San Francisco Chemical Co., which actually mines the property under lease from Stauffer Chemical Co., recovered the A bed material, the high-grade bedding, and was successful in developing a beneficiation process to take care of the next bed, and they are putting the finishing touches on the process for the recovery of the third bed. So there has been no material wasted whatever from the property.

Mr. BUDGE. That would not follow exactly at Idaho, would it, Mr. Waiss?

Mr. WAISS. In the Idaho case, I described the situation there with reference to San Francisco Chemical Co. In the case of Stauffer Chemical Co., the property we have in Idaho is the Bear Lake property. There there is a steeply plunging dip to the vein and outcropping quite high up on a mountain. We have just recently completed putting in an almost lake-level adit from just above the shore of Bear Lake, and we are in the processing of drifting on the vein, and of putting in a raise up to the surface. There are some 1,500 feet of back which can be worked above this adit level. That with the very substantial length of strike promises very large production from the property. But, in order to develop the property, it has been necessary—in just putting in the intersecting adit and the very limited drifting and raise that has been put in so far, the company has put in more than $400,000 in just proving up and developing

the property, sir, an investment which, of course, is far more substantial than if some operator had gone in on the top and started working along the strike removing the comparatively limited tonnages which could have been removed from the surface by strip-mining techniques.

On a property of this type, with a steeply plunging vein and with the possibility of access at a lower level by adit, good conservation practices and our own interest in the maximum development of a valuable property dictated the making of this very substantial investment which now permits the development of 1,500 feet of back instead of just a couple of hundred feet.

Mr. BUDGE. That is the thing I cannot understand. You say for your own interests you are going to mine the low-grade ore. Each of the other companies has said for their own interest they will mine the low-grade ore. So I do not understand on what you base your fears as to conservation practices, that the high grade will be taken and the low grade left.

Mr. WAISS. No; I think that somewhat misstates my position. I do not believe that was my testimony.

What I am saying is that as fee owners of this property it is not a question of our turning from this property to some other one in the Federal domain after we have taken the material that could be most cheaply recovered. As fee owners we are under a considerable incentive to develop the maximum that we can from the acreage. By the way, the entire property only amounts to some 360 acres.

Mr. BUDGE. Thank you, Mr. Chairman.

Mr. ROGERS. Just one short question I want to ask which has been troubling me. There has been some testimony about using 100 percent of the mined ore, that is both the high grade and the low grade.

Mr. WAISS. Yes.

Mr. ROGERS. Do I understand that the low grade and high grade may be commingled in the same bed?

Mr. WAISS. No. Normally they are in successive beddings. This phosphatic series in the 3 States of Idaho, Wyoming, and Utah, is of an average thickness of around 200 feet. It ranges anywhere from 180 to about 215 feet. As it happens, both the first and the last bed of the series are of high grade. In between there are some high-grade beds, some lower grade beds, and some limestone beddings which are almost completely devoid of phosphate.

Just exactly where you find yourself in this series will depend upon the local geologic conditions affecting the position of these beds. But the material is not mixed in the sense that I understood you to mean.

Mr. ROGERS. With reference to the use of 100 percent of the ore in a particular tract, that refers to 100 percent of the ore mined and not 100 percent of the ore that might be present?

Mr. WAISS. I believe it refers to 100 percent of the material in place.

For example, as we are planning—let me take the example of the San Francisco Chemical Co. It has recently extended underground operations in the Crawford Mountains in Utah and, as a matter of fact, it has spent some $2,500,000 in putting in an underground installation, in the underground development and in the surface plant related to that underground development. It is currently working out the metallurgical problems involved in taking a multiple bedding

out on that underground operation. Instead of just taking the single high-grade bed, which is a comparatively narrow vein and at least for the present leaving the remainder of the rock in place as a means of attempting to achieve a more uniform product, lower mining costs, and greater total yield, they are currently working on the final engineering of a process which would permit taking out multiple beddings of the high grade together with the adjacent lower grade beddings and, in effect, working the broad lode, and in that way producing a material which could be upgraded to acidulation-grade rock.

Of course, success in the working out of the metallurgy and engineering problems involved is very closely related to this whole problem of reserves. The moment you can take an adjacent 12-foot bedding in addition to the 6-foot high-grade bedding, even with the beneficiation losses, you have more than doubled the total reserves from the particular property.

In its operation San Francisco Chemical Co. has been quite careful to protect this potential asset. The lower grade beddings are there for the taking as soon as the metallurgy can be completed.

Mr. ROGERS. Thank you, sir.

Do you have any more questions, Mr. Budge?

Mr. BUDGE. No questions.

Mr. ROGERS. Thank you very much for an interesting discussion.

Mr. WAISS. I have appreciated the opportunity to appear and the courtesy which you have extended.

Mr. ROGERS. Let me ask you this one further question: It seems to me Mr. King testified as to the reserves, and I do not know whether he was requested to furnish further information on it or not. But would you furnish the committee with full data as to the present reserves of the three companies in your association?

Mr. WAISS. Yes, we would be very happy to. Of course, again when you start referring to reserves, you are immediately faced with this problem: In response to one of the questions directed to him, I recall Mr. King said that they had 10 years of reserves blocked out. That does not mean that those properties will be worked out in 10 years. That means simply that there are 10 years of reserves clearly in sight, that is, in the light of present development of the properties and of the present state of metallurgy.

If you were called upon to make an engineering estimate of the total production from that property, it would, of course, be vastly greater. If you asked how much has actually been blocked out, he would say, "Yes, we have in sight right at the moment a certain amount."

Mr. ROGERS. What I want, and I hope the information asked for shows, is the acreage holdings for these purposes, the estimated tonnage reserves, which I am sure will be an estimate, and in many instances a very rough estimate.

Mr. WAISS. Yes.

Mr. ROGERS. And the manner in which that is determined, that is, the extent to which it is intended by the person holding the reserves and mining the reserves.

Mr. WAISS. Yes. I hope that the estimates the committee receives will give some key as to the basis of definition of terms of reference used in that estimating because otherwise it will be very hard to relate one estimate to another, because they will be made on entirely different

assumptions; in one case blocked-out ore as against an engineering estimate of total ore and the like.

Mr. BUDGE. Could I pursue that just a minute, Mr. Chairman?

Mr. ROGERS. Mr. Budge.

Mr. BUDGE. Mr. Waiss, your associated companies then have a known reserve for at least 10 years which is blocked out and has been demonstrated. Do you have any information as to what your total reserves might be, based upon acreage calculation which you have made the basis of reserves of these other companies?

Mr. WAISS. We would be very happy to have our engineers prepare such an estimate based on a comparable measure, as nearly as we can draw a comparison between fee properties and leasehold properties.

Mr. BUDGE. When you speak of a 10-year reserve which has been blocked out you are speaking of a reserve based upon the present demand and the present metallurgical situation, are you not, Mr. Waiss?

Mr. WAISS. It is 10 years reserve based on our anticipated demand for the product, yes.

Mr. BUDGE. Do you anticipate a greater demand? And, if so, in what percentage?

Mr. WAISS. Since the estimate was not my own, I cannot definitely say what Mr. King had in mind in the way of increased demand. I believe that he was making allowance for reasonable increase in the demand, but I do not know the specific percentage.

Mr. BUDGE. Would you include that, in view of the fact we have had testimony that the demand will increase 50 percent in the next 5 years?

Mr. WAISS. I will be very happy to.

Mr. BUDGE. I would like to know the status of your reserves compared with the other companies. That is what I am getting at. And what you base your reserves on, whether it is your present operation or a future operation, and, if so, what the future operation is predicted to be.

Mr. WAISS. We will be very happy to attempt to oblige you.

Mr. BUDGE. Thank you very much.

Mr. ROGERS. Let me make this clear, and let the record show in the statement prepared by the staff member, Mr. Soule, the reserves to which we referred is the measured ore, the indicated ore, and the inferred ore, and, of course, the basis upon which these indications are made, that is the measured ore, the indicated ore, and inferred ore.

Of course, we would also like to have information as to the amount of material being left in the ground that may become valuable by virtue of further improvements in processing methods as a result of research and development that might bring about the use of that ore which could not otherwise be used.

Mr. BUDGE. Could the same courtesy be extended to the other witnesses if they desire to avail themselves of it?

Mr. ROGERS. Yes. As a matter of fact, I would like to have it from all the witnesses, and I intended to ask all of them for it. I thought

I had or some of the other members had. If they have not, we will ask Mr. Soule to get a letter off to them right now and request that be included, if that meets with your approval, Mr. Budge, because I certainly think it is highly important.

Mr. BUDGE. What we are all trying to do is to develop the industry, and at the same time we do not want any practices carried out which are not in the public interest, and that is why we are seeking the information. I know that these hearings have been very educational to me, and I am sure they have been to the other members of the committee.

Mr. ROGERS. That will conclude the hearings for today, and the committee will adjourn subject to the call of the Chair.

(Whereupon at 12:45 p. m., the subcommittee adjourned, to reconvene at the call of the Chair.)

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